

9.22 Borough of Medford Lakes

This section presents the jurisdictional annex for the Borough of Medford Lakes.

9.22.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Julie Horner Keizer Title: Borough Manager Address: 1 Cabin Circle, Medford Lakes, NJ 08055 Phone Number: 609-654-8898 Fax Number: 609-654-1816 E-mail Address: mlmanager@comcast.net	Name: Mark J. McIntosh Title: Borough Clerk Address: 1 Cabin Circle, Medford Lakes, NJ 08055 Phone Number: 609-654-8898 Fax Number: 609-654-1816 E-mail Address: markjmc@comcast.net

9.22.2 PROFILE

9.22.2.1 Population

The population of the Borough of Medford Lakes is estimated to be 4,146, based on information gathered during the 2010 U.S. Census.

9.22.2.2 Location

The Borough of Medford Lakes is located in eastern Burlington County and encompasses approximately 1.2 square miles. The Borough is completely surrounded by the Township of Medford. There are 22 lakes with this small area and hundreds of lakefront and lake view properties.¹

9.22.2.3 Brief History

The Medford Lakes Development Company was formed in 1927, and in 1928 the Colony Club Pavilion was built by Colonists on ground donated by the Development Company. Medford Lakes Borough began as a resort town with all construction made of log to complement the Pine Lands scenery.

As the area grew, so did the need for increasingly modern conveniences. The sewage system for the community was built in 1937-1938 through WPA assistance and has been extended so that now Medford Lakes is completely sewered. Medford Lakes Borough was established as an independent municipality in 1939.²

9.22.2.4 Governing Body Format

The Borough of Medford Lakes follows the Municipal Manager form of government. Under this form, The mayor is selected from the council but the duties associated with the title are essentially limited to presiding over and voting with the council and a handful of appointments. The manager serves as the

¹ <http://www.medfordlakes.com/index.php/about>

² <http://www.medfordlakes.com/index.php/borough-history>

chief executive of the municipality. The manager ideally is politically neutral and operates the municipality in a businesslike manner. The manager prepares the budget for the council, oversees the negotiation and implementation of contracts and handles most personnel matters.

9.22.2.5 Growth/Development Trends

Borough of Medford Lakes did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

9.22.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Flooding*	DR-1530	Yes	July 12-23, 2004	Medford Lakes saw 7.26 inches (184 mm) of rain fall over a 14-hour period. The heavy rain caused a series of dam breaks and breaches in the surrounding areas which have since been replaced.
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-20, 2009	Snow removal throughout the Borough was required as a result of this event.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Snow removal throughout the Borough was required as a result of this event.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Snow removal throughout the Borough was required as a result of this event.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	The road and drainage outlets were damaged on Cheyenne Trail and Mizagee Trail as a result of this event.
Hurricane Sandy	DR-4086	Yes	October 26-	The road and drainage outlets were damaged on Cheyenne Trail and Mizagee Trail as a result of

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			November 8, 2012	this event. In addition, the Borough utilized emergency services and other resources to contribute to clean up and debris removal.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

*= Though DR-1530 occurred prior to 2008, the event is included in the previous events for Medford Lakes due to the severity and amount of damage sustained

9.22.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Borough of Medford Lakes.

Natural 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
Flood	1% Annual Chance: \$5,509,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$5,566,083 500-Year MRP: \$38,802,642 Annualized Loss: \$380,377	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$22,792,320 5% of GBS: \$113,961,600	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$2,723,014,000	Frequent	33	High
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$1,281,078 2,500-Year MRP: \$29,320,553 Annualized Loss: \$25,726	Rare	6	Medium
Landslides	Not available	Rare	6	Low

Notes:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.22.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Borough of Medford Lakes indicated that the municipality has a limited fiscal capability; moderate planning, regulatory, administrative, technical, community resiliency and community political capability; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.22.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Medford Lakes.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	1/1977		NJAC 5:23-2.18	Medford Twp.			
2) Zoning Ordinance	X	8/2010		Chapter 145	Medford Lakes			
3) Subdivision Ordinance	X	8/2010		Chapter 145	Medford Lakes			
4) NFIP Flood Damage Prevention Ordinance	X	2/1989		Chapter 127	Medford Lakes			
4a) Cumulative Substantial Damages	X	2/1989		Chapter 127	ML Construction/Planning			
4b) Freeboard	N/A							
5) Growth Management	X	6/2009		Chapter 145	Medford Lakes			
6) Floodplain Management / Basin Plan	X	2/1989		Chapter 127	Medford Lakes			
7) Stormwater Management Plan/Ordinance	X	8/2010		Chapter 145 Chapter 204	Medford Lakes			
8) Comprehensive Plan / Master Plan/ General Plan	X	11/2007			Medford Lakes			
9) Capital Improvements Plan								
10) Site Plan Review Requirements	X	8/2010		Chapter 145	Medford Lakes			
11) Open Space Plan	X			Chapter 145	Zoning			
12) Stream Corridor Management Plan	X			Chapter 204				Stormwater Mgmt.
13) Watershed Management or Protection Plan	X			Chapter 204				

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X			OEM				
16) Emergency Response Plan	X			OEM, FIRE, POLICE				
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.22.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	N	
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	DEPT. OF ADMINISTRATION
3) Planners or engineers with an understanding of natural hazards	N	
4) NFIP Floodplain Administrator	Y	CONSTRUCTION DEPARTMENT
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	DEPT. OF ADMINISTRATION
9) Grant Writer(s)	Y	DEPT. OF ADMINISTRATION
10) Staff with expertise or training in benefit/cost analysis	Y	FINANCE DEPARTMENT

9.22.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	Yes
11) Other	No

9.22.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	-
Building Code Effectiveness Grading Schedule (BCEGS)	NP	-
Public Protection	NP	-
Storm Ready	NP	-
Firewise	NP	-

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Borough of Medford Lakes's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.22.6 MITIGATION STRATEGY

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

9.22.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Rebuild dams to current requirements				X		
Maintain draft points			X			Public maintains Works as needed

9.22.6.2 Hazard Vulnerabilities Identified

Medford Lakes Borough officials noted that the Borough is particularly vulnerable to flooding, wildfire, and severe storms.

- Severe flooding often occurs along the Upper and Lower Aetna Lakes as well as Ballinger Lake. In addition, the Borough continually monitors the local dams in effort to mitigate dam failure and associated flooding issues. Part of this monitoring includes working closely with Colony Club – a private entity that owns several dams within the Borough.
- Beginning in 1933 through the 1960's large wildfires (>100 acres) burned frequently in Medford Township and Medford Lakes areas, with at least one extremely large fire (>1000 acres) each decade. In the 1960s, 8 large wildfires burned 11,098 acres in the area.
- In the past decade Medford Lakes Borough has been affected by several severe winter storms as well as Hurricane Irene and Hurricane Sandy. Both hurricanes resulted in a large quantity of vegetative debris due to the heavily wooded nature of the community. These events are documented in Section 9.22.3 of this Annex.

In the Borough of Medford Lakes, 243 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 22% is located within the 1% annual chance flood area. A total of \$21,913,000 (0.6%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Borough of Medford Lakes has a total of 65 NFIP policies, 0 of which are located within the 1% annual chance flood area. FEMA has identified 1 Repetitive Loss (RL) property, and 0 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Medford Lakes (B)	65	20	\$224,385	1	0	0	14	51

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.22.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
MLB-1	Clear debris along feeder streams within municipality	N/A	Flood	3-1	Lead: Borough Public Works Support: Borough OEM, NJ DEP	High	High	Federal, State and county grants, Burlington County Bridge Commission	Long	Low	NR
MLB-2	Create a mitigation outreach program to help residents prepare for disaster	N/A	All	5-1 5-3	Lead: Borough OEM	Medium	Low (~\$500)	General Budget, EMA Grant	On-going	High	PE
MLB-3	Acquire, elevate, relocate flood prone properties.	Existing	Flood	1-3 3-1 4-1	Lead: Medford Lakes OEM Support: Twp. Public Works, Twp. Planning Board, NJOEM	High	High (\$3.5M)	HMGP, Capital Funding	Long	Medium	PP
MLB-4	Work with NJFFS and Burlington County GIS to develop mapping of wildland urban interface areas	N/A	Fire	1-1 1-4 1-5	Lead: Borough Planning Dept.	Medium	Low	Firewise, municipal budget	Short	Medium	ES
MLB-5	Develop and maintain an inventory of contacts and addresses for route alerting during large scale emergencies	N/A	All	1-1 1-5	Borough OEM	High	Low	Municipal Budget	On-going	Medium	ES
MLB-6	Initiate a public outreach program to educate homeowners on the risk of wildfires and personal property mitigation strategies	N/A	Fire	5-1 5-2 5-3	Lead: Medford Lakes OEM, Medford Lakes. Support: Medford Lakes Division of Fire, NJ Forest Fire Service	High	Low	Firewise, EMAA, local funding through operations budget	Short	High	PE
MLB-7	Coordinate a dam safety	N/A	Flood	1-1	Lead: Medford	High	Low	EMAA	Short	High	PR

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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
	workshop for dam owners to educate them on responsibilities and to assist in updating/revising dam emergency action plans			1-5 3-1 3-2	Lakes OEM, Medford Twp. OEM Support: NJDEP			Funding			
MLB-8	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
MLB-9	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
MLB-10	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR
MLB-11	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES
MLB-12	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
MLB-13	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR

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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
MLB-14	Promote the participation of Floodplain Administrators within the planning process and other activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
MLB-15	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
MLB-16	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short	High	PR
MLB-17	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	NA	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.

2. PP = Property Protection: 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.

3. PE = Public Education and Awareness: 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.

4. NR = Natural Resource Protection: 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.

5. SP = Structural Projects: 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.

6. ES = Emergency Services: 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.

9.22.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
MLB-1	1	High	High	Yes	Yes	No	Low
MLB-2	2	Medium	Low	Yes	Yes	Yes	High
MLB-3	3	High	High	Yes	Yes	No	Medium
MLB-4	3	Medium	Low	Yes	Yes	Yes	Medium
MLB-5	2	High	Low	Yes	Yes	Yes	Medium
MLB-6	3	High	Low	Yes	Yes	Yes	High
MLB-7	4	High	Low	Yes	Yes	Yes	High
MLB-8	7	Medium	Low	Yes	Yes	Yes	Medium
MLB-9	3	Medium	Medium	Yes	Yes	No	High
MLB-10	1	Medium	Medium	Yes	Yes	Yes	Medium
MLB-11	3	Medium	Medium	Yes	Yes	Yes	Medium
MLB-12	1	Medium	Low	Yes	Yes	Yes	High
MLB-13	1	High	Low – High	Yes	Yes	Yes	High
MLB-14	2	Medium	Medium	Yes	Yes	Yes	Medium
MLB-15	3	Medium	Low	Yes	Yes	Yes	Medium
MLB-16	3	Medium	Low	Yes	Yes	Yes	High
MLB-17	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.22.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.22.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Borough of Medford Lakes has no additional risk vulnerabilities that need to be addressed at this time.

9.22.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Borough of Medford Lakes is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is 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 Medford Lakes has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.22-1: Medford Lakes Flood Exposure Map

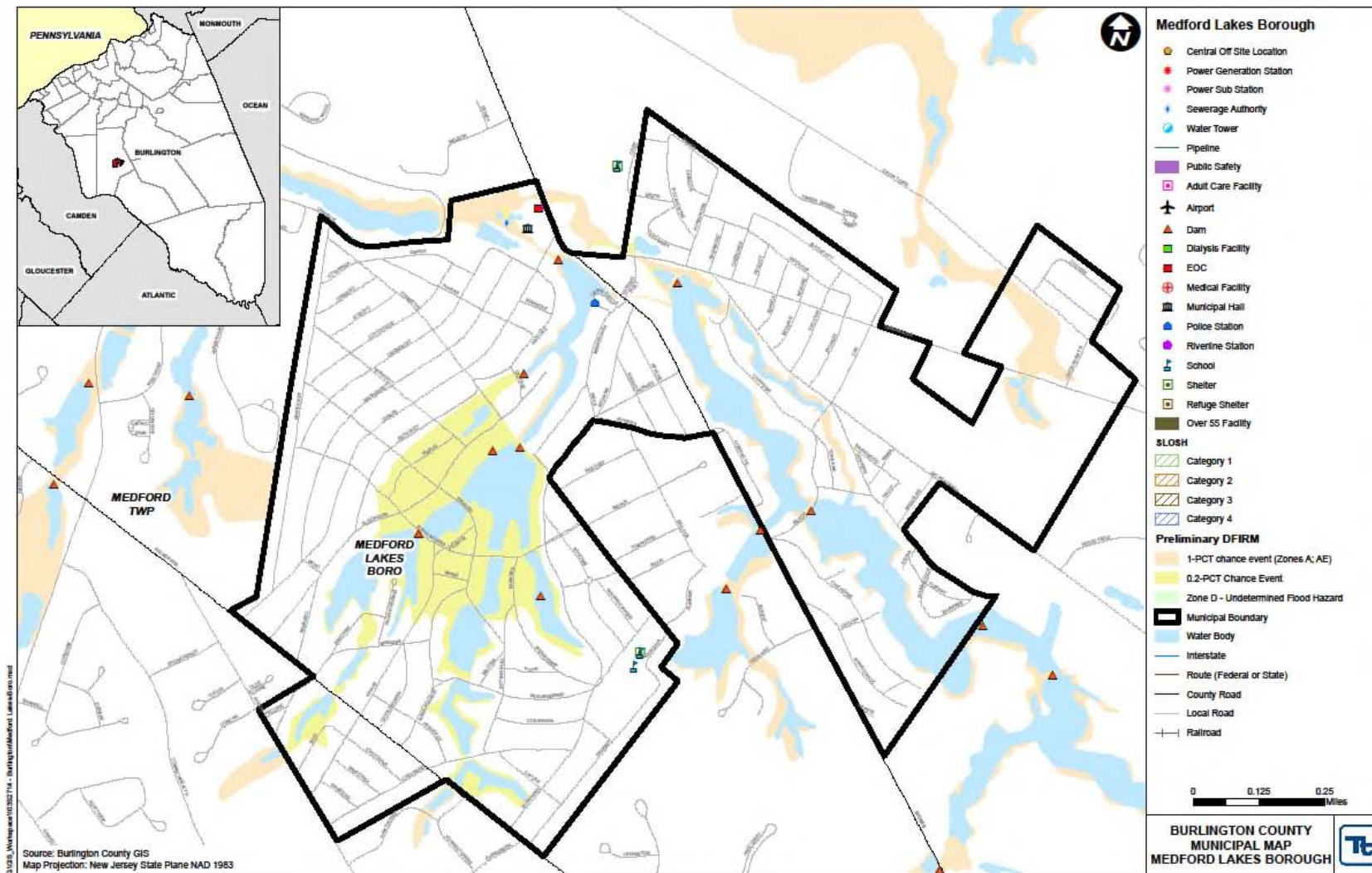
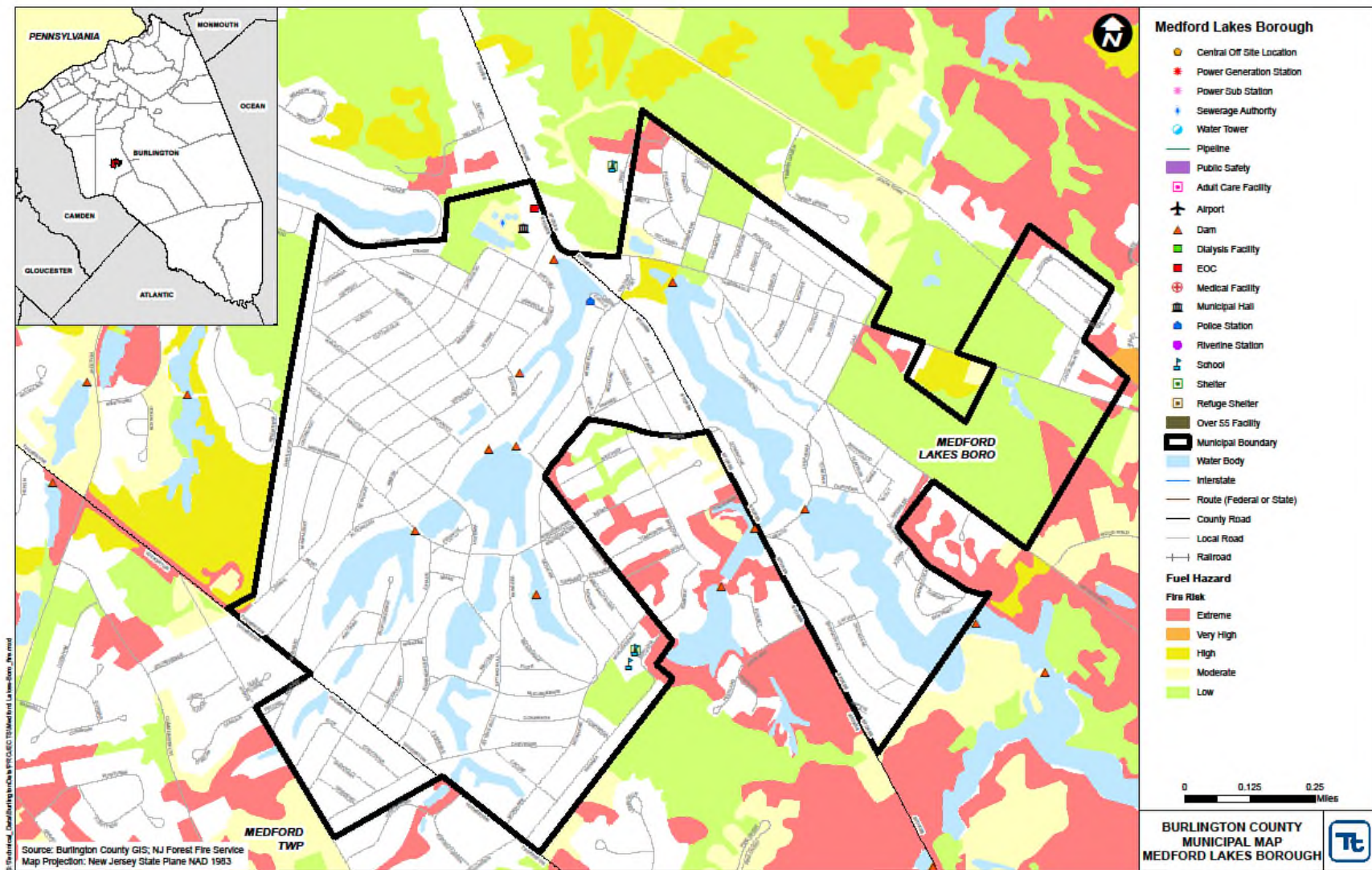


Figure 9.22-2: Medford Lakes Wildfire Fuel Exposure



9.22.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Borough of Medford Lakes to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.22.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.23 Township of Moorestown

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

9.23.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Lee R. Lieber Title: Lieutenant/Police Department Address: 1245 Church Street, Moorestown, NJ 08057 Phone Number: (856) 914-3041 Fax Number: (856) 235-9178 E-mail Address: llieber@moorestownpd.com	Name: Thomas Ford Title: Director of Community Development Address: 2 Executive Drive, Ste 9A, Moorestown, NJ 08057 Phone Number: (856) 914-3021 Fax Number: (856) 914-3006 E-mail tford@moorestown.nj.us

9.23.2 PROFILE

9.23.2.1 Population

The population of the Township of Moorestown is estimated to be 20,726, based on information gathered during the 2010 U.S. Census.

9.23.2.2 Location

The Township of Moorestown is located in the northwestern portion of Burlington County and encompasses 16.1 square miles. The Township is bordered by Mount Laurel to the south, Maple Shade to the west, Cinnaminson to the northwest, Delran to the north and northeast, and Willingboro to the east.

9.23.2.3 Brief History

Although there were property owners as early as 1680 in the present township location, (formerly known as Chester Township), the Village of was 'founded' in 1682 when the first owners built homes and actually lived here. Thomas Hooton and son acquired 600 acres in 1682.

In May of 1686, when Philadelphia was about 3 years old, John Rodman bought 500 acres on the west side of Chester Township, and Thomas Rodman bought 533 acres additional in the same area, where the area soon became known as the Village of Rodmantown. The growing area around the eastern spring was known as the Village of Chestertown.

Thomas Moore and his wife Elizabeth settled in 1722 and in 1732, Moore purchased 33 acres of land on the north side of The King's Highway. Mr. Moore set up a hotel on the northwest corner of The King's Highway and Union Streets. With so much land eventually being owned by Thomas Moore, the name Moorestown gradually replaced Chester informally in what is now the center of town. Finally, Moorestown formerly split off from Chester and became a Township.

Although Moorestown is over 300 years old, it was incorporated by an act of the NJ State Legislature approved on March 11, 1922. That is from Chapter 68 of the Laws of 1922 published in the 'Acts of the

One Hundred and Forty-seventh Legislature of the State of New Jersey and Seventy-ninth Under the New Constitution' MacCrellish & Quigley Co., State Printers, Trenton, N.J., 1923. ¹

9.23.2.4 Governing Body Format

The Township of Moorestown is governed under the Council-Manager (Faulkner Act) form of government. Under this form, a five-member Council is elected at large on a partisan basis. Each member is elected for a 4-year term, on an overlapping basis. The council is the legislative body of the municipality but also appoints the positions of Municipal Clerk, Tax Assessor and well as provides for appointments of members of Boards. Perhaps most importantly, the council appoints a qualified manager to serve as the chief executive.

The mayor is selected by the council members. Either way, the mayor serves as the presiding member of the council. The Manager has the full administrative responsibility for the municipality, including appointment of department heads as well as subordinates, preparation and presentation of the budget and the negotiation of contracts.²

9.23.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.23.10) of this annex which illustrates the hazard areas along with the location of potential new development.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Willowbrook	Residential	27	Bridgeboro and Garwood Rds.	7000/10.01-10.10 & 7000/27, 32	Flood	Under construction
Ravikio	Residential	16	Stanwick Rd.	5700/2,3	None	Planned
Burris	Residential/ Commercial	20 Residential/ 124 Bed Commercial	E. Main Street & Marter Ave.	6500/14	None	Under construction
Canton	Residential	13	E 3 rd . St.	6001/22	None	Approved for Construction
Lutheran House	Residential	1	E. Main St	6102/15	None	Planned
Toll Brothers	Residential	122	Center Rd.	9103/2	None	Under Construction

¹ <http://www.moorestown.nj.us/content/193/default.aspx>

² http://www.njslom.org/magart0307_p14.html

9.23.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	Majority of the roads within the Township were closed and impassable during the course of the storm.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Majority of the roads within the Township were closed and impassable during the course of the storm.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Majority of the roads within the Township were closed and impassable during the course of the storm.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Road closures due to flooding and downed trees were experienced throughout the Township during the course of the hurricane.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Many roads became closed and impassable due to downed trees. These roads remained closed for several days after the event. Large area power outages were experienced throughout the Township, with approximately 25% of the Township without power for a week. Several residences sustained severe damage from fallen trees and numerous businesses sustained loss through disruption of service due to power outages.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.23.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Moorestown.

Natural 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
Flood	1% Annual Chance: \$45,454,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$5,625,366 500-Year MRP: \$24,229,181 Annualized Loss: \$317,996	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$24,274,010 5% of GBS: \$121,370,050	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$1,942,572,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$1,620,231 2,500-Year MRP: \$37,652,784 Annualized Loss: \$34,859	Rare	6	Medium
Landslides	Not available	Occasional	12	Low

Notes:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.23.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Moorestown indicated that the municipality has high planning, regulatory, administrative, technical, and fiscal capability; high community resiliency and community political capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.23.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Moorestown.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	1/1/77		NJAC 5:23	Com Dev	+	+	
2) Zoning Ordinance	X	6/19/48		Chapter 180	Com Dev	+	+	Sec 180-94 Special Setbacks from Streams & Ponds
3) Subdivision Ordinance	X	6/28/54		Chapter 158	Com Dev	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	12/11/95		Chapter 83	Com Dev	+	+	NFIP Map Date 1/19/96
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	4/3/06		158-25	Com Dev	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X	12/3/09			Com Dev	+	+	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
9) Capital Improvements Plan	X				Public Works	+	+	
10) Site Plan Review Requirements	X	1/24/77		158 -Article V	Com Dev	+	+	
11) Open Space Plan	X	12/3/09		Master Plan Section IV	Com Dev	+	+	
12) Stream Corridor Management Plan	X	2/28/00		180-94 & 95	Com Dev	+	+	95-Soil Erosion 94-Setbacks from Streams & Ponds
13) Watershed Management or Protection Plan	X	8/1/13		Master Plan Conservation Element	Com Dev	+	+	
14) Economic Development Plan	X	11/12/09		Master Plan Section XI	Com Dev	+	+	
15) Comprehensive Emergency Management Plan	X	10/15/2009			Police/OEM	+	+	Plan being recertified by NJSP in 2013
16) Emergency Response Plan	X	10/15/2009			Police/OEM	+	+	
17) Post Disaster Recovery Plan	X	10/15/2009			Police/OEM	+	+	
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.23.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Community Development/Third Party Inspection Agency
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Community Development/Township Engineer; Zoning and Planning Board Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Community Development
4) NFIP Floodplain Administrator	Y	Community Development/Building Inspector
5) Surveyor(s)	Y	Township Admin, Com Dev/ Township Engineer
6) Personnel skilled or trained in GIS applications	Y	Township Engineer
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Police Department/Fire Department
9) Grant Writer(s)	Y	Various Departments
10) Staff with expertise or training in benefit/cost analysis	Y	Chief Financial Officer

9.23.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	Yes
11) Other	N/A

9.23.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready Community	Yes	5/2006
ISO Fire Rating Program	Yes	1970

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Moorestown's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.23.6 MITIGATION STRATEGY

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

9.23.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section of the Annex. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Mitigate residential flooding from the Pennsauken Creek on the south side of Winthrop Avenue and continuing onto commercial properties on the south side of the 200 block of West Camden Avenue.		X				This project is dependent on funding. Budget and personnel restraints have prevented progress

9.23.6.2 Hazard Vulnerabilities Identified

The Township has identified flooding issues associated with New Albany Road at Glen Avenue, New Albany Road at Pompeston Creek, and N. Stanwick Road at Pond View Drive. In addition, due to the large number of mature trees in the Township, damage from felled trees to electric utilities and residences occurs. These incidents are often caused by Nor'Easters, Tropical Storms, and Hurricanes.

In the Township of Moorestown, an estimated 171 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 7% is located within the 1% annual chance flood area. A total of \$195,075,000 (4.6%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Moorestown has a total of 150 NFIP policies, 49 of which are located within the 1% annual chance flood area. FEMA has identified 1 Repetitive Loss (RL) property.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Moorestown (T)	150	27	\$252,772	0	0	25	35	115

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Map

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.23.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
MT-1	Conduct an evaluation of backyard residential flooding on the south side of Winthrop Ave. from the Pennsauken Creek, including studies on: - Dredging existing creek bed - Bulkheading creek bed - Raising affected residences - Buying out affected residences	N/A	Flood	1-1 1-5 2-1 2-2	Lead: Community Development Support: Twp. DPW, NJOEM, FEMA	High	High	Grant funding with local cost share	DOF	High	PP
MT-2	Conduct an evaluation of recurring flooding at the intersection of New Albany Rd. and Glen Ave. - Survey existing storm drainage - Engineering study on replacement of existing mains with larger capacity	N/A	Flood	1-3 2-1	Lead: Township Engineer, DPW	High	High	Grant funding with local cost share	DOF	Medium	SP
MT-3	Conduct an evaluation of recurring flooding at New Albany Rd. at the Pompeston Creek	N/A	Flood	1-3 4-1	Lead: DPW, Township Engineer, NJ	High.	High	Grant funding with local cost share	DOF	Medium	SP

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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
	- Survey Creek flow for obstruction - Engineering plan for clearing of Creek obstructions - Engineering study for raising profile of roadway				DEP						
MT-4	Develop a comprehensive resident notification system: NWS Storm Ready Community Program - Emergency Alert Radios - Email Alerts - Social Media Alerting	N/A	Flood, Severe Storm, Winter Storms, Wildfire	1-1 1-5	Lead: OEM, NWS, County OEM	High	Low	Local	On-going	High	ES
MT-5	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee, Planning, OEM, Floodplain Adm.	Medium	Low	Municipal Government, OEM and Floodplain Admin.	Short Term	Medium	PR
MT-6	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: - Disaster preparedness - Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	On-going	High	PE
MT-7	Improve municipal communications systems to include information	N/A	All Hazards	3-2	OEM with support from County,	Medium	Medium	County Budget	Short Term	Medium	ES PR



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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
	sharing with county and surrounding municipalities.				NJOEM and FEMA						
MT-8	Obtain and install backup power sources at all critical facilities to include shelters.	N/A	All Hazards	1-2 1-5 3-2	Municipality engineering, OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	On-going	Medium	ES
MT-9	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipal Government, OEM with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
MT-10	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipal Government, OEM with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
MT-11	Continue to promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipal Government with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	On-going	Medium	PR
MT-12	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk, OEM and government	Medium	Low	Municipal Budget	Short Term	High	PR
MT-13	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property	N/A	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PR



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
	owners and utility companies.										

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.

2. PP = Property Protection: 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.

3. PE = Public Education and Awareness: 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.

4. NR = Natural Resource Protection: 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.

5. SP = Structural Projects: 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.

6. ES = Emergency Services: 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.

9.23.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
MT-1	4	High	High	Yes	Yes	No	High
MT-2	2	High	High	Yes	Yes	No	Low
MT-3	2	High	High	Yes	Yes	No	Low
MT-4	2	High	Low	Yes	Yes	No	High
MT-5	7	Medium	Low	Yes	Yes	Yes	Medium
MT-6	3	Medium	Medium	Yes	Yes	No	High
MT-7	1	Medium	Medium	Yes	Yes	Yes	Medium
MT-8	3	Medium	Medium	Yes	Yes	Yes	Medium
MT-9	1	Medium	Low	Yes	Yes	Yes	High
MT-10	1	High	Low – High	Yes	Yes	No	High
MT-11	2	Medium	Medium	Yes	Yes	Yes	Medium
MT-12	3	Medium	Low	Yes	Yes	Yes	Medium
MT-13	3	Medium	Low	Yes	Yes	Yes	High
MT-14	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

9.23.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.23.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Moorestown has no additional risk vulnerabilities that need to be addressed at this time.

9.23.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Moorestown is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Moorestown has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.23-1: Moorestown Flood Exposure Map

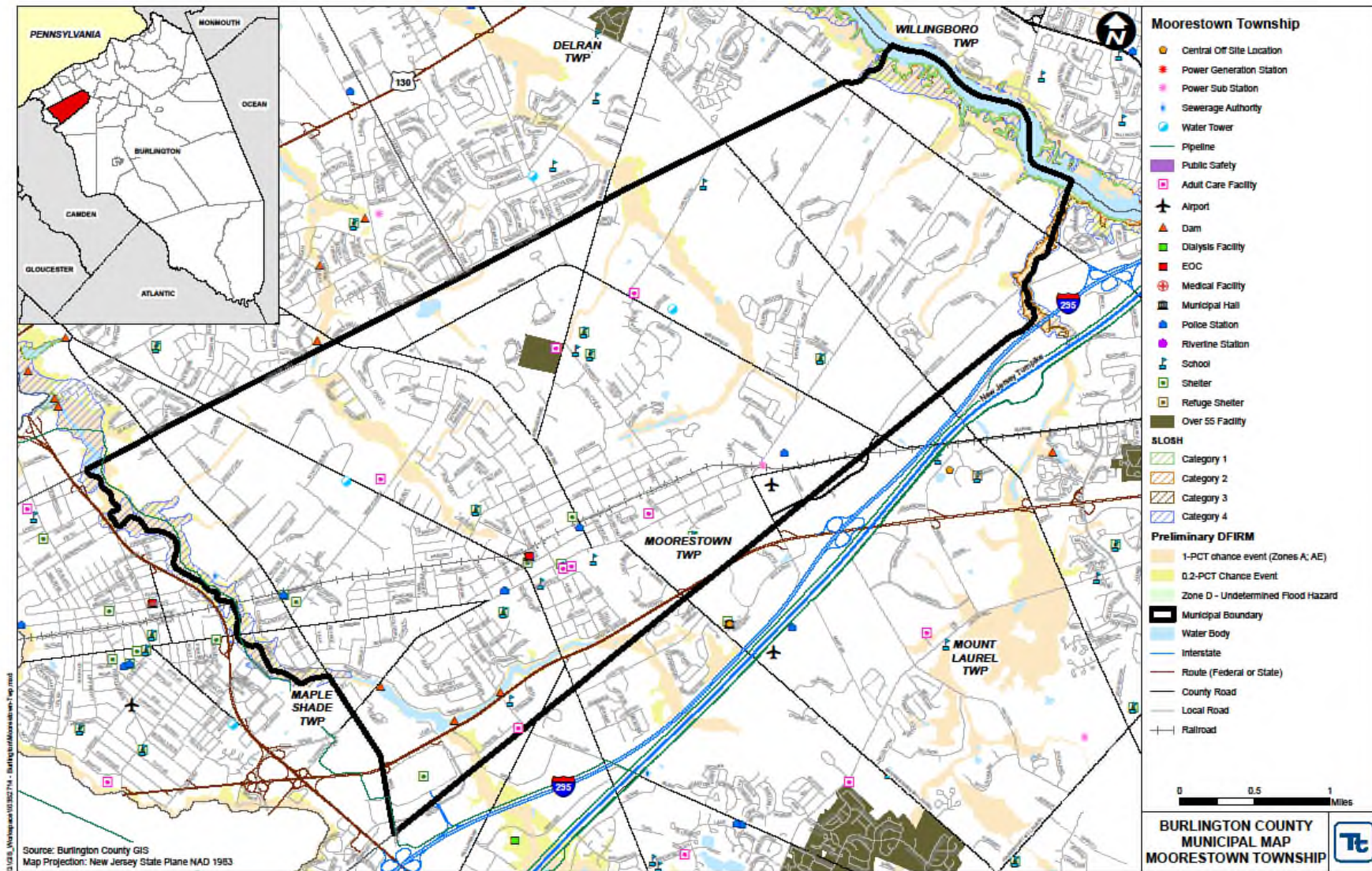
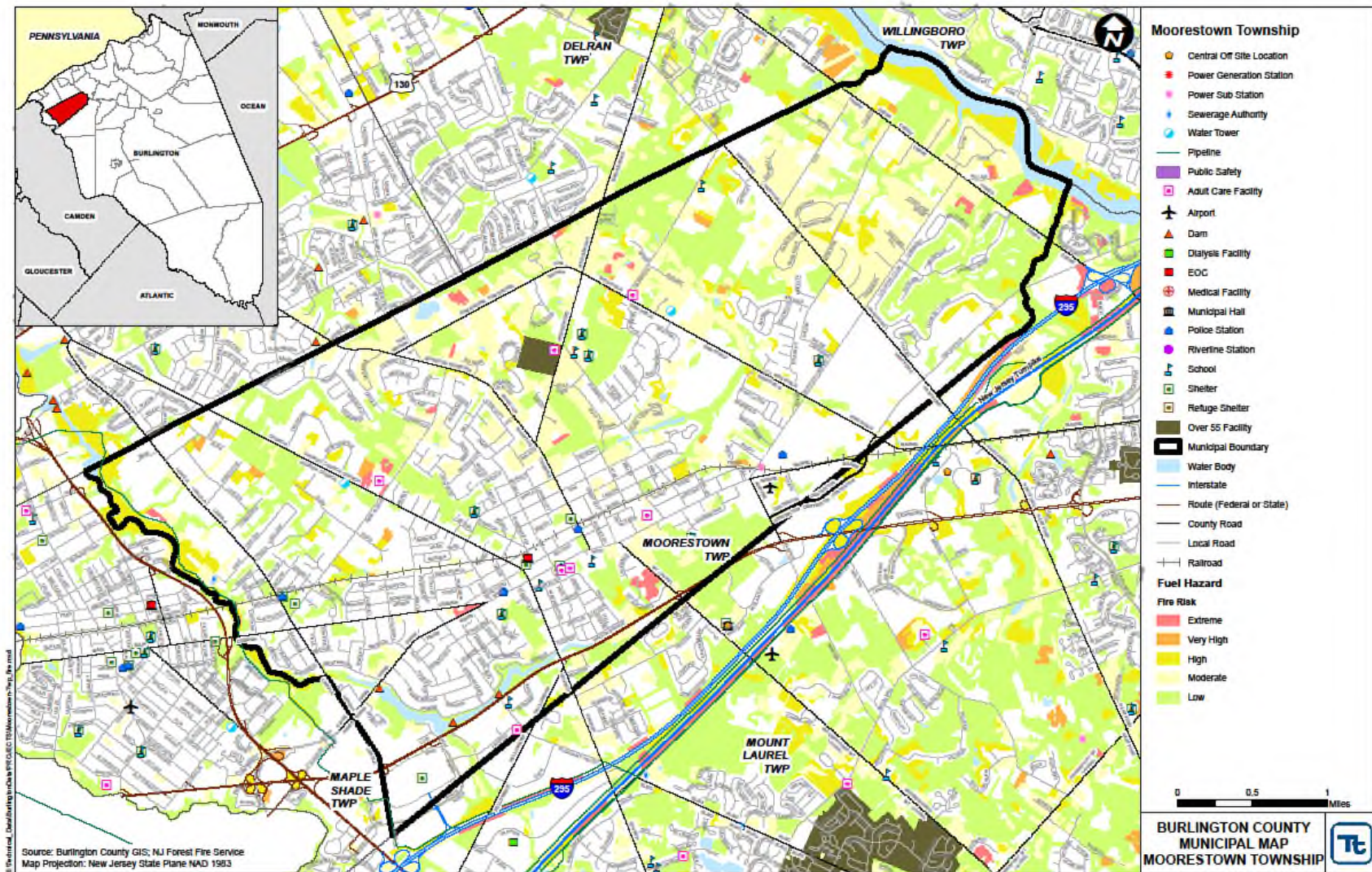


Figure 9.23-2: Moorestown Wildfire Fuel Exposure



9.23.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Moorestown to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	X

9.23.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.24 Township of Mount Holly

This section presents the jurisdictional annex for the Township of Mount Holly.

9.24.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Steven E. Martin Title: OEM Coordinator/Chief of Police Address: 23 Washington St. Mt. Holly, NJ 08060 Phone Number: 609-845-1150 Fax Number: 609-845-1176 E-mail Address: smartin@twp.mountholly.nj.us	Name: Eric Berry Title: Chief of Police, MHPD Address: 23 Washington St. Mt. Holly, NJ 08060 Phone Number: 908-769-6050 Fax Number: 609-267-6627 E-mail Address: eberry@twp.mountholly.nj.us

9.24.2 PROFILE

9.24.2.1 Population

The population of the Township of Mount Holly is estimated to be 9,536, based on information gathered during the 2010 U.S. Census.

9.24.2.2 Location

The Township of Mount Holly is centrally located in the northern portion of Burlington County. The Township is bordered by Lumberton to the south, Hainesport to the west, Westampton to the north, and Eastampton to the east.

9.24.2.3 Brief History

What is now Mount Holly was originally formed as Northampton on November 6, 1688. Northampton was incorporated as one of New Jersey's initial 104 townships by an Act of the New Jersey Legislature on February 21, 1798. Portions of the township were taken to form Little Egg Harbor Township (February 13, 1740, now part of Ocean County), Washington Township (November 19, 1802), Pemberton borough (December 15, 1826), Coaxen Township (March 10, 1845, now known as Southampton Township), Pemberton Township (March 10, 1846), Westampton Township (March 6, 1850) and Lumberton Township (March 14, 1860). The township was renamed Mount Holly as of November 6, 1931, based on the results of a referendum held three days earlier.¹

9.24.2.4 Governing Body Format

The Township of Mount Holly is governed under the Township form of government. Under this form, Mount Holly is governed by five Council members, each of whom is elected for a four-year staggered term. At the beginning of each year, the Council members elect one of their members to serve as Mayor and one as Deputy Mayor for that year.

¹ <http://www.twp.mountholly.nj.us/content/388/default.aspx>

This five-member Council is empowered to enact local ordinances, to levy municipal taxes and conduct the affairs of this community. The Township Council conducts all of its business during monthly meetings open to the public.²

9.24.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.6.10) of this annex which illustrates the hazard areas.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Parkers Mill Village	Mixed-use	444	Levis Drive	41.09-41.12, 31-36	N/A	Currently under construction

9.24.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	The township sustained major flooding to include infrastructure damage and flooding at police headquarters.
Fire	FM-2695	Yes	May 15-19, 2007	N/A
Winter Storm	DR-1873	Yes	December 19-20, 2009	Record snowfall disrupted transportation and public safety systems. The township opened and cleared road to public facilities and coordinated with emergency services and other agencies to protect the public and property.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Record snowfall disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public health and safety.

² <http://www.twp.mountholly.nj.us/content/386/557/default.aspx>

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	N/A
Winter Storm	DR-1954	Yes	December 26-27, 2010	A severe snowstorm affected 15 counties, including Burlington County. Roads were closed or severely compromised creating threats to public health and safety.
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	The township sustained major flooding causing damage to infrastructure, flooding in the business district and flooding at police headquarters.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Tree, sidewalk, and minor road damage throughout the township. Debris removal functions completed.

Note:

N/A = Not applicable

9.24.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Mount Holly.

Natural 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
Flood	1% Annual Chance: \$17,264,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,876,325 500-Year MRP: \$11,210,691 Annualized Loss: \$147,778	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$9,425,570 5% of GBS: \$47,127,850	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$239,742,000	Frequent	21	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$662,828 2,500-Year MRP: \$15,420,860 Annualized Loss: \$14,388	Rare	6	Low
Landslides	Not available	Rare	6	Low

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.24.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Mount Holly indicated that the municipality has high planning, regulatory, administrative, technical, and fiscal capability; high community resiliency and community political capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.24.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Mount Holly.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X			Twp. Code Chp. 96 & NJAC 5:23	Construction Official	+	+	NJ Uniform Construction Code
2) Zoning Ordinance	X	6/22/92		Twp. Code Chp. 149	Zoning Officer	+	+	
3) Subdivision Ordinance	X	6/22/92		Twp. Code Chp. 149	Zoning Officer	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	5/11/87		Twp. Code Chp. 149	Construction Official	+	+	
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	X	11/14/05		Twp. Code Chp. 149	Joint Land Use Board	+	+	
6) Floodplain Management / Basin Plan	X	5/11/87		Twp. Code Chp. 149	Construction Official	+	+	
7) Stormwater Management Plan/Ordinance	X	9/26/05	X	Twp. Code Chp. 240B	Twp. Officials	+	+	
8) Comprehensive Plan / Master	X		X		JLUB	+	+	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
Plan/ General Plan								
9) Capital Improvements Plan	N/A							
10) Site Plan Review Requirements	X			Twp. Code Chapter 149	JLUB/ Construction Official	+	+	
11) Open Space Plan	X			Twp. Code Chapter 149	Construction Official	+	+	
12) Stream Corridor Management Plan	X	6/22/92		Twp. Code Chapter 149	Construction Official	+	+	
13) Watershed Management or Protection Plan	X	6/22/92		Twp. Code Chapter 149	Construction Official	+	+	
14) Economic Development Plan			X		Economic Development Director	+	+	
15) Comprehensive Emergency Management Plan	X	5/09			OEM	+	+	EOP
16) Emergency Response Plan	X	5/09			OEM	+	+	EOP
17) Post Disaster Recovery Plan	X	5/09			OEM	+	+	EOP
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A							



9.24.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Alaimo Associates
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Construction Official
3) Planners or engineers with an understanding of natural hazards	Y	Environmental Resolutions
4) NFIP Floodplain Administrator	Y	Construction Official
5) Surveyor(s)	Y	KS Engineers
6) Personnel skilled or trained in GIS applications	Y	Alaimo/ERI Associates
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Mt. Holly OEM
9) Grant Writer(s)	Y	Finance Dept./ Twp Managers Assistant
10) Staff with expertise or training in benefit/cost analysis	N	

9.24.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	Yes
11) Other	No

9.24.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Mount Holly's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.24.6 MITIGATION STRATEGY

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

9.24.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this Section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Working with dam safety inspectors and applicable engineers, perform a dam safety inspection.			X			Dam inspections began in 2013 and will continue into 2014. Hurricane Sandy and municipal personnel shortage has delayed
Make necessary repairs to place the dam into compliance.	X					Necessary repairs will be identified through safety inspections. Action to take place upon identification of issues. Funding and personnel issues
Establish an early warning system utilizing newly installed local USGS monitoring equipment.	X					Require additional personnel. Budgetary restrictions
Implement local construction requirements which require newly constructed structures to meet adopted ground clearance standards so living spaces are not exposed to flood conditions.	X					Budgetary and personnel restrictions
Perform a hydrologic study on the Rancocas and its flows through Mill Dam and associated tributaries.	X					Hydrologic study on hold pending source of funding
During periods of sustained rains, the Buttonwood Run, Rancocas Creek, and other tributaries will be checked for blockages and visible debris. These blockages and debris shall be removed.			X			DPW/OEM monitor waterways for debris
Drainage culverts and piping shall be evaluated to ensure that they are still the proper size to handle the capacity and volume of water which is encountered during these periods.	X					Evaluation on hold pending source of funding



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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Establish access points for the fire department in event of a fire in these areas.	X					Lack of personnel resources
Seek alternative means of water flow and rerouting of water during periods of increased precipitation and flooding.	X					Budgetary Restrictions
The Rancocas Creek will be monitored for excessive debris and cleared of same.			X			DPW/OEM monitor waterways
Install heavy vegetation and erosion control measures to maintain soil consistency and protect against soil shifting or landslide.	X					Installation of heavy vegetation and erosion control measures dependent on source of funding
Remove thick, dried groundcover from these areas with the intention of significantly decreasing the fire load and rapid flame spread in the occurrence of a fire.	X					Lack of personnel resources and funding
Provide residents in these areas educational information relating to fire spread and their environment. Advising them what they can do to assist in fire prevention.	X					Lack of personnel resources

9.24.6.2 Hazard Vulnerabilities Identified

In the Township of Mount Holly, an estimated 606 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 12% is located within the 1% annual chance flood area. A total of \$82,109,000 (5.0%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Mount Holly has a total of 99 NFIP policies, 70 of which are located within the 1% annual chance flood area. FEMA has identified 2 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Mt. Holly (T)	99	70	\$1,139,746	2	0	35	78	21

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
MOUNT HOLLY TWP POLICE DEPT	Mount Holly Township	Police		X			
BURLINGTON COUNTY COLLEGE	Mount Holly Township	School		X			
MOUNT HOLLY TOWNSHIP MUNICIPAL	Mount Holly Township	Municipal		X			

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)
- X = Facility located within the DFIRM boundary.
- (1) = HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore, this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).
- DFIRM = Digital Flood Insurance Rate Maps
- HAZUS = Hazards United States
- NA = Not available
- T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this Plan for additional vulnerability information relevant to this jurisdiction.

9.24.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
HP-1	Conduct and facilitate community and public education and outreach for residents and business to include, but not be limited to, the following to promote and affect natural hazard risk reduction: • Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepages referencing the HMP web pages. • Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties and instructing them on how they can learn more and implement mitigation. • Use newsletters to better educate the public on flood insurance, the availability of mitigation grant funding and personal natural hazard risk reduction measures	N/A	All Hazards	5-1 5-1 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
HP-2	Incorporate ordinances and/or zoning restrictions to control and mitigate future development in hazard areas, specifically, Section 149 of the Mount Holly Township	N/A	All Hazards	1-1 1-4 2-1	Municipality with support from County, NJOEM and	Medium	Medium	Municipal Budget	Short	Medium	PR

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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
	Code				FEMA						
HP-3	Obtain and install backup power sources in critical facilities	N/A	All Hazards	1-5 3-2	Municipality with support from County, NJOEM, and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES
HP-4	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	1-5 3-2	Municipality with support from County, NJOEM, FEMA, and surrounding counties	Medium	Low	Municipal Budget	Short	High	PR ES
HP-5	Work with regional agencies (i.e. County and NJOEM) to help develop damage assessment capabilities at the local level to include training and certification programs(e.g. code officials, floodplain managers, engineers)	N/A	All Hazards	1-1 3-1	Municipality with support from County, NJOEM, and FEMA	Medium	Medium	Municipal Budget, FEMA, HMA, and HLS grant programs	Short-Long, DOF	Medium	PR
HP-6	Continue to support the implementation, monitoring, maintenance, and updating of this plan as defined in Section 7.0.	New and existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, and FEMA	High	Low-High (for 5-year update)	Municipal Budget, FEMA Planning Grants	On-going	High	PR
HP-7	Maintain compliance with and good standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions.	N/A	Flood, Severe Storm	1-4 1-5 2-1	Municipality (via municipal engineer/NFIP Floodplain Administrator) with support from NJOEM, FEMA	High	Low-Medium	Municipal Budget	On-going	High	PR PE
HP-8	Promote the participation of Floodplain Administrators within the planning process and other activities.	N/A	Flood	1-4 4-2	Municipality with support from County,	Medium	Medium	Municipal Budget	Short	Medium	PR

SECTION 9.24: TOWNSHIP OF MOUNT HOLLY

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
					NJOEM, FEMA						
HP-9	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption.	N/A	Severe Storm	1-4 2-1	Municipal Code Enforcement	Medium	Low	Municipal Budget	Short	High	PR
HP-10	Evaluate benefits of participating in CRS program	Existing	All Hazards	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Township Committee, Planning	Medium	Low	Township/Public	On-going	Medium	PR
HP-11	Conduct and facilitate community and public outreach for residents and businesses to promote natural hazard risk reduction to include: - Disaster Preparedness - Hazard Mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
HP-12	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
HP -13	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM, FEMA	Medium	Low	Municipal Budget	Short Term, DOF	Medium	PE
HP -14	Provide public education and outreach on proper installation and/or use of backup power.	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short Term	High	PR
HP -15	Address dangerous trees, threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies	N/A	Severe Storm, Severe Winter Storm	1-5 4-4	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP
HP-16	Support the mitigation of vulnerable structures via retrofit (eg. Elevation, flood-proofing) or relocation to protect structures from future damage with	Existing	Flood, Severe Storm	1-1 2-1 2-2	Municipality (via Municipal Engineer/NFIP Floodplain	High	High	FEMA Mitigation Grants	Long Term DOF	Medium	PP

SECTION 9.24: TOWNSHIP OF MOUNT HOLLY

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
	repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates based on cost-effectiveness and repetitive loss. Phase 2: Work with the property owners to implement selected action based on available funding from the State and FEMA and local match availability.				Administrator) with support from County Planning, NJOEM, FEMA						

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.24.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
HP-1	3	Medium	Medium	Yes	No	No	High
HP-2	3	Medium	Medium	Yes	Yes	Yes	Medium
HP-3	2	Medium	Medium	Yes	Yes	Yes	Medium
HP-4	1	Medium	Low	Yes	Yes	Yes	High
HP-5	2	Medium	Medium	Yes	No	No	Medium
HP-6	1	High	Low-High (for 5-year update)	Yes	No	No	High
HP-7	3	High	Low-Medium	Yes	Yes	Yes	High
HP-8	2	Medium	Medium	Yes	Yes	Yes	Medium
HP-9	2	Medium	Low	Yes	Yes	Yes	High
HP-10	7	Medium	Low	Yes	No	No	Medium
HP-11	3	Medium	Medium	Yes	No	No	High
HP-12	1	Medium	Medium	Yes	Yes	Yes	Medium
HP-13	3	Medium	Low	Yes	Yes	Yes	Medium
HP-14	3	Medium	Low	Yes	Yes	Yes	High
HP-15	2	Medium	Low-Medium	Yes	Yes	Yes	Medium
HP-16	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.24.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.24.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Mount Holly has no additional risk vulnerabilities that need to be addressed at this time.

9.24.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Mount Holly is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Mount Holly has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.24-1: Mount Holly Flood Exposure Map

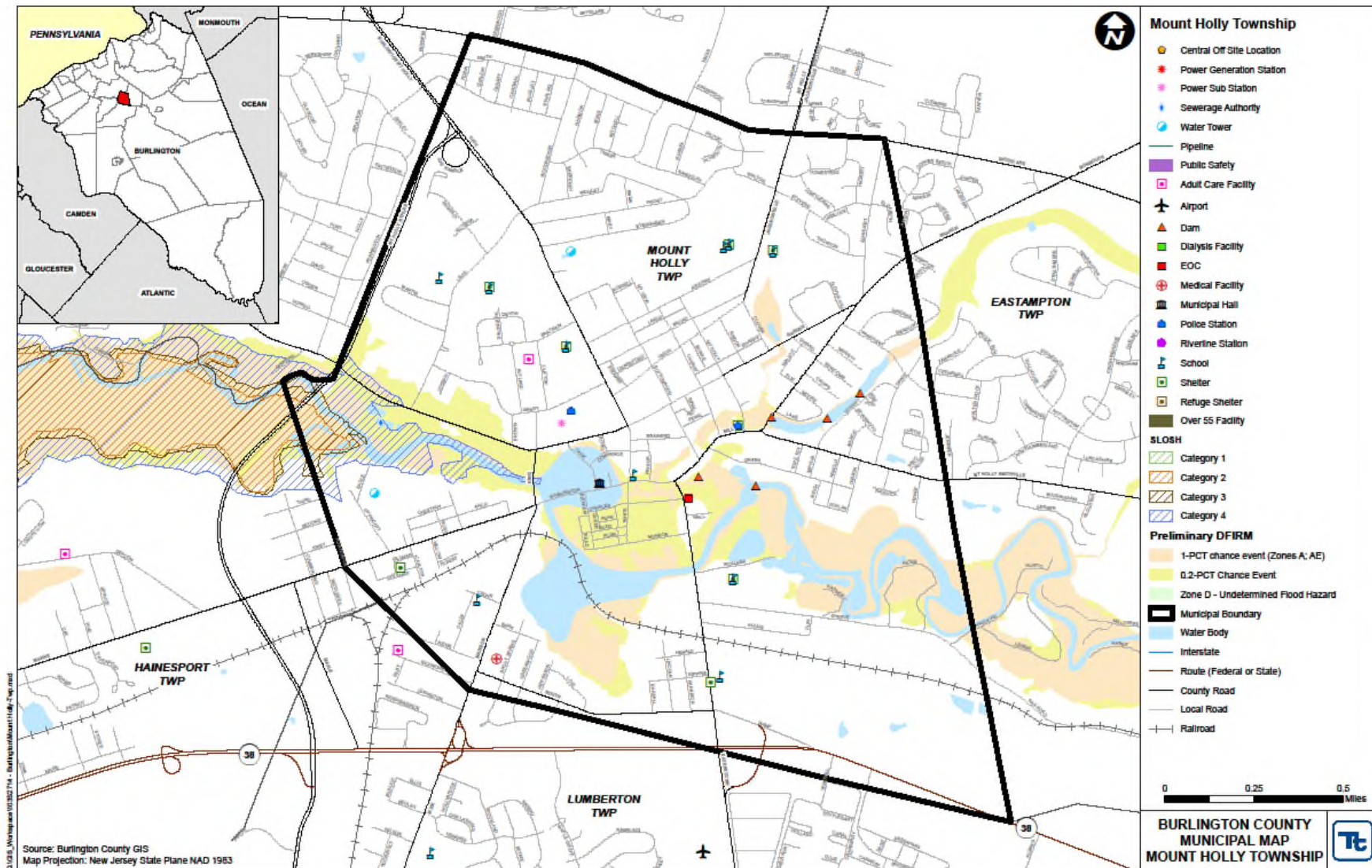
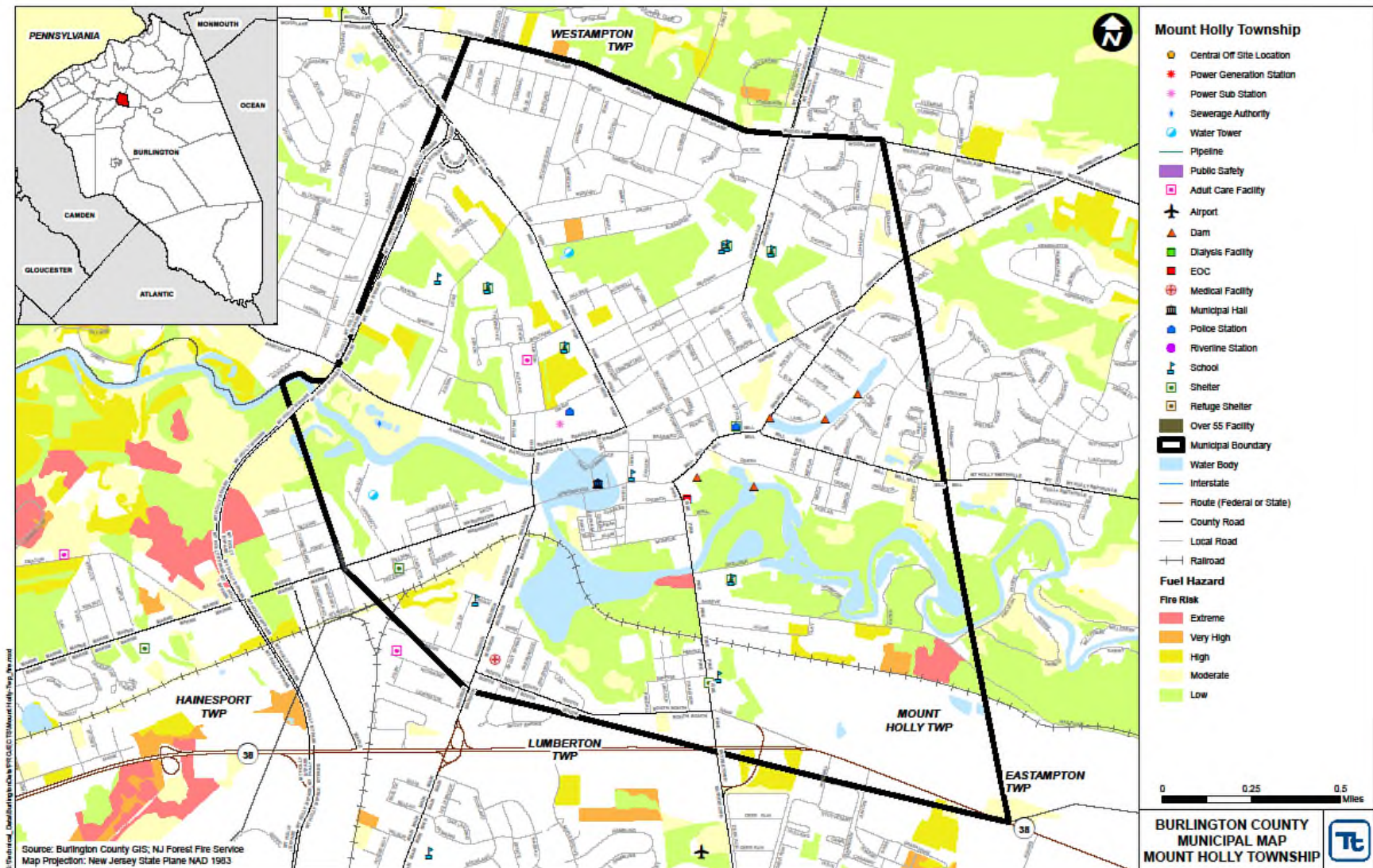


Figure 9.24-2: Mount Holly Wildfire Fuel Exposure



9.24.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Mount Holly to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.24.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.25 Township of Mount Laurel

This section presents the jurisdictional annex for the Township of Mount Laurel.

9.25.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Francis W. Pagurek Title: Emergency Management Coordinator Address: 201 Masonville Rd., Mount Laurel, NJ 08054 Phone Number: (856) 778-1274 Ext. 15 Cell: (609) 820-3278 Fax Number: (856) 727-8281 E-mail Address: fran.pagurek@mlems.org	Name: Maureen Mitchell Title: Township Manager Address: 100 Mount Laurel Rd., Mount Laurel, NJ 08054 Phone Number: (856) 234-0001 Ext. 1210 Fax Number: (856) 234-8240 E-mail Address: mmitchell@mountlaurel.com

9.25.2 PROFILE

9.25.2.1 Population

The population of the Township of Mount Laurel is estimated to be 41,846, based on information gathered during the 2010 U.S. Census.

9.25.2.2 Location

The Township of Mount Laurel is centrally located in the western portion of Burlington County and encompasses approximately 22 square miles. The Township is bordered by Evesham to the south, Maple Shade to the northwest, Moorestown to the north, Hainesport to the east, and Lumberton and Medford Township to the southeast. In addition, the Township shares borders with both the Pennsauken River to the west and the Rancocas River to the east – two major tributaries of the Delaware River.

9.25.2.3 Brief History

Long before it became Mount Laurel Township, the earliest known history of this area began with the Lenni-Lenape Native Americans who lived throughout the Delaware Valley from around 1400 until the 1700s. Evidence is found of their farming and hunting villages along the banks of the Rancocas River.

Mount Laurel played a small part in the American Revolution. Although no bloody battles were fought on Township ground, the American troops, led by General Washington, and the British forces, led by General Clinton, did pass through the area and camped here en route to meeting each other for battles elsewhere in New Jersey.

The 19th Century saw the establishment of Mount Laurel village, centrally located in the vicinity of William Evan's original homestead, Mount Pray. People settled near enough to be able to walk conveniently to the new meeting house.

In 1872, this area known as “Lower Evesham” became officially incorporated into its own village, Mount Laurel. The present Mount Laurel Township encompasses over 13,000 acres but the official village has nearly vanished.¹

9.25.2.4 Governing Body Format

Mount Laurel Township is run as a Council-Manager form of government with a full-time Township Manager and a part-time governing body elected on staggered four-year terms. The governing body selects a Mayor and Deputy Mayor annually from amongst themselves.² Under this form, the council is the legislative body of the municipality but also appoints the positions of Municipal Clerk, Tax Assessor and well as provides for appointments of members of Boards, Commissions and Authorities. Perhaps most importantly, the council appoints a qualified manager to serve as the chief executive.

The mayor can either be selected from the council or directly elected. Either way, the mayor serves as the presiding member of the council. The Manager has the full administrative responsibility for the municipality, including appointment of department heads as well as subordinates, preparation and presentation of the budget and the negotiation of contracts.³

9.25.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.6.10) of this annex which illustrates the hazard areas along with the location of potential new development.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Highview Homes, LLC	Res.	196 Apts. 7 Bldg.	209 & 213 Ark Rd.	Blk. 306, Lots 15 & 16	Power Outages	Apartment Complex Under Construction
WAWA, Inc.	Comm.	Bldg. & Gas Station	3601 Rt. 38	Blk 500, Lots 2,3, 4	N/A	Wawa Convenience Store and Gas Pumps
Apple American Group	Comm.	1	1100 Route 73	Blk 1301 Lot 1.01	N/A	Restaurant – Final Approval
Brandywine Operating Partnership	Comm.	3	7000 Midlantic Drive	Blk 515 Lot 1	N/A	Hotel & 2 restaurant pads – Final Approval
Mt Laurel Development	Comm.	1	Fellowship & Church & Beaver	Various	N/A	Walmart Retail Store – Final Approval

¹ <http://southjerseywebdesign.com/prototypes/mountlaureltpw/township-history-the-early-settlers/>

² <http://mountlaurel.com/about/>

³ http://www.njslom.org/magart0307_p14.html

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
The Falls Group	Comm.	3	3320 Route 38	Blk 304 Lot 2.01	N/A	Hotel & Restaurant – Phase I only
Briggs Associates LLC	Comm.	1	3330-3370 Route 38	Blk 304 Lot 1	N/A	Dunkin Donuts – Final Approval
Centerton Assoc. LLC	Res.	3 Bldg. 120 apts.	Centerton Rd. & Marne Hwy.	Blk 503/03, Lot 3	Potential Hazmat from I-295, NJTP & Pipelines	100% Affordable rental units
Diving Horse Prop.	Child care ctr.	1 Bldg.	809 & 813 S. Church Street	Blk1006, Lots 18 & 20	N/A	100% Affordable rental units

9.25.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	\$606,680.00 in property damage due to flooding along the North Branch of the Pennasuken Creek from flash flooding in the Countryside and Ramblewood Developments affecting 484 residential structures.
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-20, 2009	\$130,187.46 (Snow Removal, Fallen Trees, Power Outages)
Winter Storm	DR-1889	Yes	February 5-6, 2010	\$180,757.89 (Snow Removal, Fallen Trees, Power Outages)
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	\$113,037.92 (Snow Removal, Fallen Trees, Power Outages)
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	\$23,956.36 (Debris Removal, Minor Flooding & Minimal Property Damage)

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	Debris Removal, Minor Flooding & Minimal Property Damage

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.25.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Mount Laurel.

Natural 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
Flood	1% Annual Chance: \$57,533,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$10,560,323 500-Year MRP: \$52,585,049 Annualized Loss: \$615,445	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$41,950,410 5% of GBS: \$209,752,050	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$3,278,537,000	Frequent	24	Medium
Drought	Not available	Occasional	14	Medium
Earthquake	500-Year MRP: \$2,647,509 2,500-Year MRP: \$60,735,547 Annualized Loss: \$55,593	Rare	6	Medium
Landslides	Not available	Rare	6	Low

Note

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.25.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Mount Laurel indicated that the municipality has moderate planning, regulatory, administrative, and technical capability; high community resiliency and community political capability; limited fiscal capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.25.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Mount Laurel.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop- ment					
1) Building Code	X	10/17/83		Chapter 66	Community Development	+	+	
2) Zoning Ordinance	X	10/17/83		Chapter 154	Community Development	+	+	
3) Subdivision Ordinance	X	10/17/83		Chapter 138	Community Development	+		
4) NFIP Flood Damage Prevention Ordinance	X	10/17/83		83-7	Consulting engineer	+		
4a) Cumulative Substantial Damages	X	10/17/83		83-7	Consulting engineer	+		
4b) Freeboard	X	10/17/83		83-7	Consulting engineer	+		
5) Growth Management	X	10/17/83		83-7	Planning and Zoning	+		
6) Floodplain Management / Basin Plan	X	10/17/83		83-7	Consulting engineer	+		
7) Stormwater Management Plan/Ordinance	X	10/17/83		Chapter 134	Zoning and Planning	+		
8) Comprehensive Plan / Master Plan/ General Plan	X			22-7	Township Council, Zoning and Planning	+		
9) Capital Improvements Plan	X				Township Manager	0		Budgetary

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop- ment					
10) Site Plan Review Requirements	X			Chapter 154-128	Planning and Zoning	0		
11) Open Space Plan	X			22-7	Township Manager	+		
12) Stream Corridor Management Plan	X			Chapter 134-2	Planning and Zoning	+		Consulting Township Engineer
13) Watershed Management or Protection Plan	X			Chapter 134-2	Consulting Engineer	+		
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X			Chapter 20-4	OEM	+		
16) Emergency Response Plan	X			Chapter 20-4	OEM	+		
17) Post Disaster Recovery Plan	X			Chapter 20-4	Township Manager, OEM	+		
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	X			Chapter 154-108	Planning and Zoning	+		
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.25.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Twp. Planner and Engineer (Contracted Professionals)
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Twp. Engineer & Community Development Department
3) Planners or engineers with an understanding of natural hazards	Y	Twp. Planner and Engineer (Contracted Professionals)
4) NFIP Floodplain Administrator	Y	Twp. Engineer
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	Y	Mutual Aid Agreement
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	OEM
9) Grant Writer(s)	Y	Township Manager, OEM
10) Staff with expertise or training in benefit/cost analysis	Y	Township Manager, OEM

9.25.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes – Township Manager
2) Capital Improvements Project Funding	Yes – Township Manager
3) Authority to levy taxes for specific purposes	Yes – Township Council
4) User fees for water, sewer, gas or electric service	
5) Impact fees for homebuyers or developers of new development/homes	Yes – Township Council
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	No
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	Yes
11) Other	

9.25.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	4	May 2012
Storm Ready	NP	
Firewise	N/A	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Mount Laurel's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.25.6 MITIGATION STRATEGY

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

9.25.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this Section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

SECTION 9.25: TOWNSHIP OF MOUNT LAUREL

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Conduct an engineering survey of the first floor and basement low openings of structures located in or near the flood zone to provide the necessary information for development of various mitigation measures including flood warning system and non-structural measures such as elevating, relocating or buying out flood-prone structures.	X					Flood Mitigation efforts were undertaken to prevent flooding in the Ramblewood and Countryside Developments by DPW & MUA. Budget and personnel issues experienced
Conduct a property owner survey to identify those structures (by street address) as to their participation in the NFIP as well as who, where, when and how much flood loss (in dollars) has occurred.			X			Twp. Engineer is the flood plain manager evaluates this on an as needed bases.
Conduct a property owner survey to identify those structures (by street address) as to their participation in the NFIP as well as who, where, when and how much flood loss (in dollars) has occurred.			X			Twp. Engineer makes these evaluations as needed at the direction of the Twp. Manager and EMC.
Township to apply to become a participant in the Community Rating System by doing some or all of 18 different types of activities to reduce flood vulnerability, to reduce flood losses and reduce individual property owner flood insurance premiums.	X					Twp. Manager will need to revisit and authorize participation with Twp. Councils approval
Conduct an engineering study in flood zones to identify storm water outfalls requiring installation of flap gates/back flow arresters to prevent flood waters from backing up into higher ground. Develop a installation schedule based on priorities and available funding.	X					A engineering study was conducted for storm water management along the North Branch of the Pennsauken Creek. DPW & MUA are continuously reevaluating.
Develop and initiate a public flood proofing outreach program for flood zone property owners to encourage them to: avoid improvements in basements and storing valuable contents in basements; to have their electrical and phone utility entrances moved to the first or higher floors so that they are operable after a flood; consider backup sump pumps and backup power sources to keep sump pumps operating during power loses; consider elevating or relocating hot water heaters, furnaces and air conditioning units to reduce water damage caused by flood waters; obtain and maintain flood insurance.	X					FEMA Out Reach did distribute and offer flood proofing information to all residents in the Ramblewood and Countyside areas of town. We need to revisit this flood proofing home initiative.

SECTION 9.25: TOWNSHIP OF MOUNT LAUREL

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Conduct an engineering study to consider installation of a dam(s) upstream of the repetitive flood damage area to temporarily store flood water.					X	Our Township Engineer explored this possibility and decided not to explore this as it is not a feasible or viable solution to our existing problem areas
Conduct an engineering study to pursue the concept of constructing regional detention basin(s) for storm water storage including the identification , acquisition and engineering of appropriate land for the purpose of improving storm water management to prevent and or lessen flooding in the affected areas.					X	Our Township Engineer explored this possibility and decided not to explore this as it is not a feasible or viable solution
Conduct an engineering study to determine and implement improvements/maintenance of the existing under drain and storm water management systems in the flood prone areas.			X			The Twp has a maintenance plan for the under drain and storm water management systems in place. Repairs are made as identified.
Develop a study to pursue the most viable mitigation solutions for flood-prone roadways and intersections in cooperation with the NJDOT, Army Corp. of Engineers, Burlington County Highway Department and NJTP Authority as appropriate. Develop a work plan when sites will be surveyed and what role local government can play in selection and implementation of mitigation activities including monetary and contextual support through capital improvement plans and applying for mitigation grant funding.		X				Met with the Burlington County Highway and Engineering. A Mitigation Grant was applied for to fund a engineering study to determine the cause of flooding on Union Mill Road so that the best mitigation solution can be implemented.
Develop flood evacuation routes for flood prone areas and develop alternate access routes to provide emergency services (police, fire, EMS and rescue) during flood periods to those individual properties which are inaccessible to these public services during a flood.				X		BCOEM developed flood evacuation routes and the EOP Evacuation Annex has been updated. Code Red, Nixel and Ready Mount Laurel are utilized to alert and notify the public about voluntart and mandatory evacuations.
Township to make a written request to the NRCS State Conservationist regarding technical and cost share assistance to local units of government as funding permits, for watershed planning and implementation for flood reduction through the watershed Protection and Flood Prevention Act (PL83-566).					X	The Township has decided not to pursue.

SECTION 9.25: TOWNSHIP OF MOUNT LAUREL

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Identify and document repetitively flooded properties. Explore mitigation opportunities for repetitively flooded properties and if necessary, carry out acquisition, relocation, elevation and flood proofing measures to protect these properties.				X		Repetitive flood properties have been identified and are few. These property owners had flood proofing measures performed as a result of previous flood damage. Property Acquisition was not deemed needed.
Develop a schedule to perform routine stream and storm drain maintenance/cleaning.		X				The North Branch of the Pennsauken Creek has been hand cleaned of loose debris and vegetation

9.25.6.2 Hazard Vulnerabilities Identified

The Township identified multiple hazard problems within the community

- Flooding of the North Branch of Pennsauken Creek in the Ramblewood and Countryside sections of town
- Susceptible to power outages due to downed trees throughout the Township
- Flooding of the Rancocas Creek along Union Mill Road between Hartford Road and Briggs Road; Hartford Road between SH 38 and Union Mill Road
- Rancocas Woods Development located in a WUI area adjacent to the Rancocas State Park
- New residential development of Rancocas Point off of Creek and Centerton lie in a potential flood zone by the Rancocas Creek
- Centerton Bridge between Mount Laurel and Westampton susceptible to flooding of Rancocas Creek
- Township has 144 storm water management retention basins that overflow as a result of heavy rains resulting in flooded local roadways
- The Ramblewood Section has a under drain(UD) system that pumps storm water and ground water from residential sumps into the North Branch of the Pennsauken Creek. The under drain system requires additional repairs
- Heater exhaust stacks for mobile homes may become clogged during a severe winter storm
- Generators needed for multiple facilities that house evacuees during an emergency. Such facilities include hotels, motels, and an assisted living center
- Congested traffic increases from non-residents develops along the Township's local and major transportation routes during emergencies
- New Jersey Turnpike, I-295, SH 38, and SH 73 cross through the Township – increasing potential for a transportation incident
- Flooding of Masons and Parker Creeks cause closing and impassability of local roads due to flooding
- Drought is a concern since MLMUA pumps water at of the aquifer
- Mount Laurel has three major pipelines running along the right-of-way between the NJTP and I-295. All these pipelines place Mount Laurel at risk for hazardous material releases, explosions, and major fires

In the Township of Mount Laurel, an estimated 673 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 9 % is located within the 1% annual chance flood area. A total of \$72,650,000 (1 %) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Mount Laurel has a total of 326 NFIP policies, 53 of which are located within the 1% annual chance flood area. FEMA has identified 1 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) Property.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Mt. Laurel (T)	326	43	\$400,697	1	0	53	93	233

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.25.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
ML-1	Establish a trail marking system in parks to ensure hiker safety and for emergency response locating	N/A	All	1-5	Parks/DPW	Low	Low	Municipal Budget	Short	Low	ES
ML-2	Establish boat slips along waterfront on both sides of the local bridges to ensure emergency response launch points and capabilities for flooding events and water rescue	New	All	1-1 3-1	Fire District & Twp.	Med	Medium	Municipal Budget	Short	Low	ES
ML-3	Trim and clear hazardous trees throughout the Township	N/A	All	1-1 3-1	DPW & PESEG	Med	Medium	Municipal Budget	On-going	High	PP
ML-4	Install generators to operate gas pumps for Ramblewood Section under drainage system	Existing	Flood	1-1 3-1	DPW & MUA	High	Medium	HMPG	Short	Medium	SP
ML-5	Remove sediment, machine clean, and widen North Branch of Pennsauken Creek back to its 1960 footprint – Including up and downstream from Mount Laurel	N/A	Flood	4-1	DPW	High	High	Federal, State and County grant opportunities, Municipal Budget	Long DOF	Medium	NR
ML-6	Develop outreach and encourage residents in Ramblewood Section and Country Side sections of the Township to flood proof homes including battery backup sump pumps and to purchase federal flood	N/A	Flood	5-1 5-2 5-3	OEM	High	Low	Municipal Budget	Short	Medium	PE

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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
	insurance										
ML-7	Conduct study to determine cause(s) and mitigation solutions to prevent flooding along Union Mill between Briggs and Hartford Road and Hartford Road between Union Mill and SH 38	N/A	Flood	1-3	DPW & Twp Manager	High	Medium	HMPG	DOF	High	PR
ML-8	Pass a local ordinance to ensure that all hotels/motel and assisted living facilities are required to have or be retrofitted with emergency generator back-up power to include 50% of lighting, all cooking /refrigeration equipment, HVAC, alarm systems, water, sewer and fire pumps, and elevators.	Existing	All	1-5 1-4	Community Development Depart., Twp Manager, & Twp Council	Medium	Low	Municipal Budget	Short	Low	PR
ML-9	Ensure critical Township facilities have emergency backup generator	Existing	All	1-2 1-5 3-2	OEM/Twp Manager	Medium	Medium	PDM	Short	Low	PR
ML-10	Establish a local emergency AM Radio Station would allow us to communicate with our residents and non-residents with information in real time during emergencies.	N/A	All	1-5 5-1	OEM	High	Medium	PDM	DOF	Medium	ES
ML-11	Enhance the Resiliency to severe storms by joining the NOAA "Storm Ready" Program	N/A	All	1-1 1-5 3-1	OEM	Low	Low	Municipal Budget	Short	Low	ES
ML-12	Provide Public Education & Outreach on Proper Installation and/or Use of Backup Power	Existing	All	1-5 5-1 5-3	OEM	Low	Low	Municipal Budget	Short	Low	PE



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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
ML-13	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
ML-14	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
ML-15	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
ML-16	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
ML-17	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
ML-18	Promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	PR
ML-19	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation	NA	Severe Storm, Severe Winter	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PR

SECTION 9.25: TOWNSHIP OF MOUNT LAUREL

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
	management) programs in conjunction with property owners and utility companies.		Storm								
ML-20	Support the mitigation of vulnerable structures via retrofit (eg. Elevation, flood-proofing) or relocation to protect structures from future damage with repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates based on cost-effectiveness and repetitive loss. Phase 2: Work with the property owners to implement selected action based on available funding from the State and FEMA and local match availability.	Existing	Flood, Severe Storm	1-1 2-1 2-2	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from County Planning, NJOEM, FEMA	High	High	FEMA Mitigation Grants	Long Term DOF	Medium	PP

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey



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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.

2. PP = Property Protection: 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.

3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.25.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
ML-1	1	Low	Low	Yes	Yes	Yes	Low
ML-2	2	Med	Med	Yes	N/A	Yes	Low
ML-3	2	Med	Med	Yes	No	Yes	High
ML-4	2	High	Med	Yes	Yes	No	Med
ML-5	1	High	High	Yes	Yes	No	Medium
ML-6	3	High	Low	Yes	No	Yes	Med
ML-7	1	High	Med	Yes	Yes	No	High
ML-8	2	Med	Low	Yes	No	Yes	Low
ML-9	3	Med	Med	Yes	Yes	No	Low
ML-10	2	High	Med	Yes	Yes	No	Med
ML-11	2	Low	Low	Yes	No	Yes	Low
ML-12	3	Low	Low	Yes	No	Yes	Low
ML-13	7	Medium	Low	Yes	Yes	Yes	Medium
ML-14	3	Medium	Medium	Yes	Yes	Yes	High
ML-15	1	Medium	Medium	Yes	Yes	Yes	Medium
ML-16	1	Medium	Low	Yes	Yes	Yes	High
ML-17	1	High	Low – High	Yes	Yes	Yes	High
ML-18	2	Medium	Medium	Yes	Yes	Yes	Medium
ML-19	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
ML-20	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.25.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.25.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Mount Laurel has no additional risk vulnerabilities that need to be addressed at this time.

9.25.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Mount Laurel is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Mount Laurel has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.25-1: Mount Laurel Flood Exposure Map

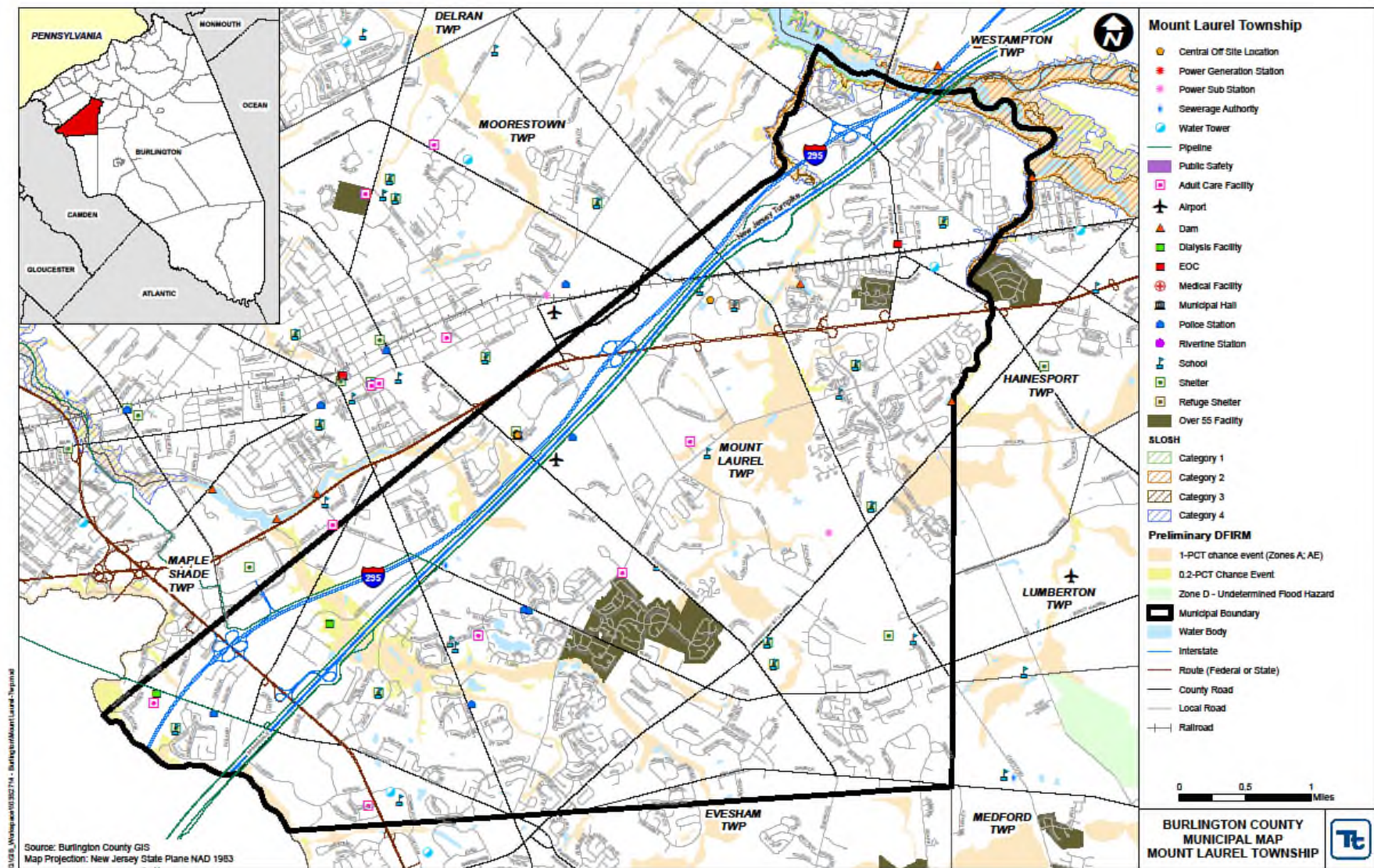
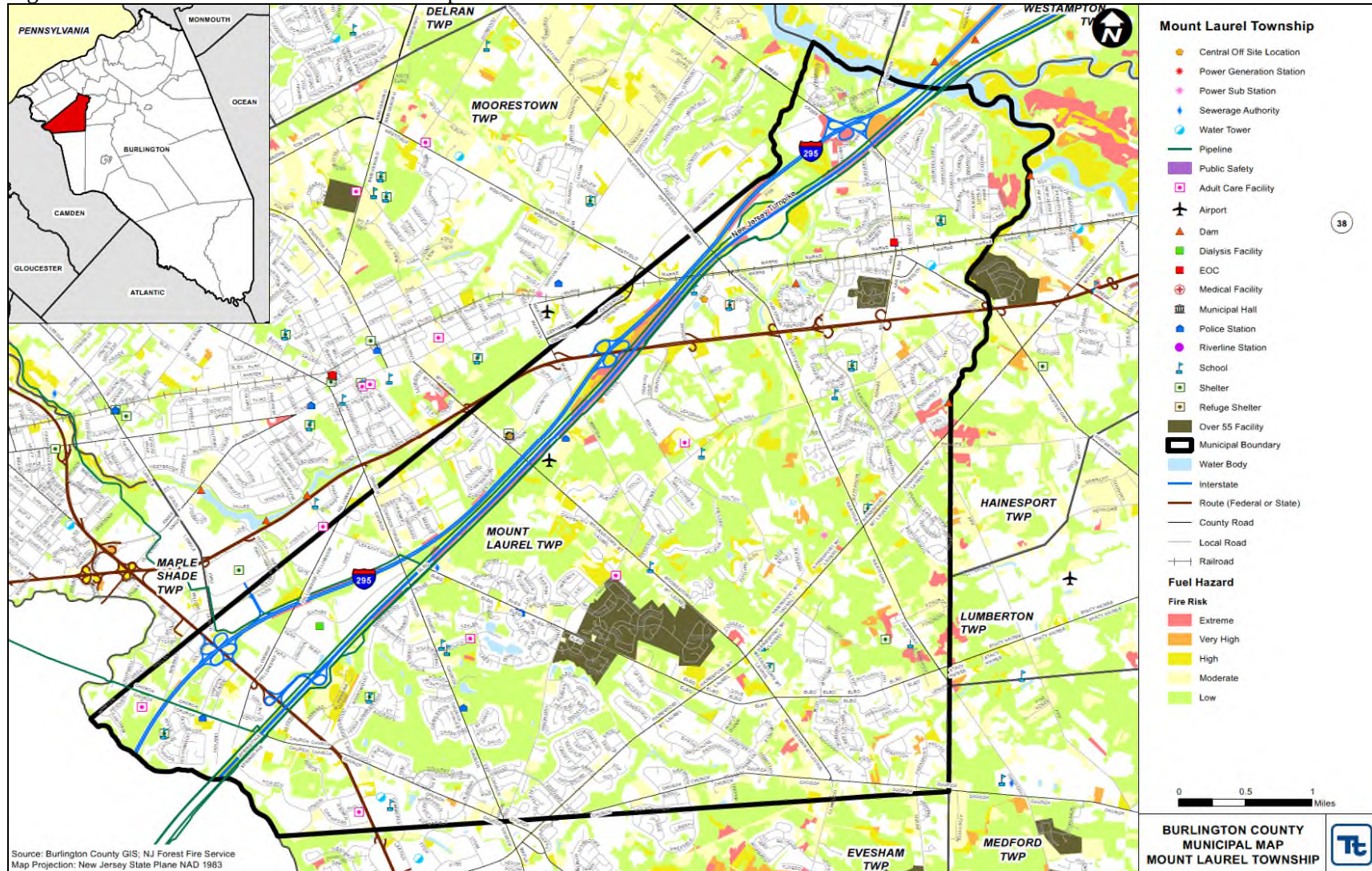


Figure 9.25-1: Mount Laurel Wildfire Fuel Map



9.25.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Mount Laurel to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	

9.25.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.26 Township of New Hanover

This section presents the jurisdictional annex for the Township of New Hanover.

9.26.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Kyle Tuliano Title: Sergeant OIC/Deputy OEM Coordinator Address: 2 Hockamick Road Cookstown, NJ 08511 Phone Number: (609) 758-7149 Fax Number: 609-758-6999 E-mail Address: Tuliano.police@newhanovertwp.com	Name: Patrick Murphy Title: Committeeman/OEM Coordinator Address: 2 Hockamick Road Cookstown, NJ 08511 Phone Number: (609) 758-6471 Fax Number: 609-758-1822 E-mail Address: murphypm@comcast.net

9.26.2 PROFILE

9.26.2.1 Population

The population of the Township of New Hanover is estimated to be 7,385, based on information gathered during the 2010 U.S. Census.

9.26.2.2 Location

The Township of New Hanover is located in the eastern portion of Burlington County. The Township is bordered by Pemberton Township to the south and southwest, Hainesport to the west, Springfield to the northwest, Wrightstown to the north, and North Hanover to the north and northeast. In addition, the Township is bordered by the Ocean County municipality of Plumsted to the east.

9.26.2.3 Brief History

New Hanover was originally formed by Royal Charter on December 2, 1723, from portions of Chesterfield Township and Springfield Township. New Hanover was incorporated as one of New Jersey's initial 104 townships by an Act of the New Jersey Legislature on February 21, 1798. Portions of the township were taken to form Pemberton borough (December 15, 1826), Pemberton Township (March 10, 1846), North Hanover Township (April 12, 1905) and Wrightstown (March 4, 1918).¹

9.26.2.4 Governing Body Format

The Township of New Hanover is governed under the Township form of government. Under this form, the five member Township Committee is elected directly by the voters in partisan elections to serve three-year terms of office on a staggered basis, with one or two seats coming up for election each year. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

¹ <http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

Under the township form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint, including the township form, may appoint a municipal administration and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.26.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.6.10) of this annex which illustrates the hazard areas.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Cheddar Close	Residential	26	Hillfield & Keller	Lots 11.31 to 11.59	S. Run Rancocas Creek	Under development Due to be completed in 2015

9.26.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	Police, Fire DPW overtime ref. snow removal, plowing \$6,343,40
Winter Storm	DR-1889	Yes	February 5-	Police, Fire DPW overtime ref. snow removal,

² http://www.njslom.org/magart0307_p14.html

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			6, 2010	plowing \$5,746.56
Severe Storms, Flooding	DR-1897	Yes	March 12- April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Police, Fire DPW overtime ref. snow removal, plowing \$5,343.21
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26- September 5, 2011	Roadways completely underwater. Police, Fire, DPW ref. roadblocks and debris removal \$4067.98
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	Minor affected residences. Vegetative debris, trees down, electrical wires down. Police, Fire, DPW overtime ref loss of power \$44,000.00 Plus

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.26.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of New Hanover.

Natural 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
Flood	1% Annual Chance: \$9,625,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$670,640 500-Year MRP: \$8,166,556 Annualized Loss: \$128,011	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$8,259,980 5% of GBS: \$41,299,900	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$1,539,739,000	Frequent	36	High
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$695,886 2,500-Year MRP: \$16,078,842 Annualized Loss: \$15,641	Rare	6	Medium
Landslides	Not available	Rare	6	Low

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.26.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of New Hanover indicated that the municipality has high planning, regulatory, administrative, technical, and fiscal capability; high community resiliency and community political capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.26.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of New Hanover.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	1977/1988		Chapt. 86, 100	NH Const. Office/ Twp. Committee	O		
2) Zoning Ordinance	X							
3) Subdivision Ordinance	X	2007		Ord. 2007-09		O		
4) NFIP Flood Damage Prevention Ordinance	No							
4a) Cumulative Substantial Damages	No							
4b) Freeboard	No							
5) Growth Management	X	2007		Ord. 2007-19	Twp. Committee	+		Part of Master Plan
6) Floodplain Management / Basin Plan	No				Twp. Engineers			
7) Stormwater Management Plan/Ordinance	X	2006/2008			Twp. Committee	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X							

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
9) Capital Improvements Plan	No							
10) Site Plan Review Requirements	X				Twp. Committee/ Planning Board			
11) Open Space Plan	X				Twp. Committee/ Planning Board			
12) Stream Corridor Management Plan	No							Managed by DEP
13) Watershed Management or Protection Plan	No							Managed by DEP
14) Economic Development Plan	X			Ord. 2007-09	Twp. Committee			See Master Plan
15) Comprehensive Emergency Management Plan	X	3-10-10		ERP	NH OEM	+	+	
16) Emergency Response Plan	X	3-10-10			NH OEM	+	+	
17) Post Disaster Recovery Plan	No							
18) Post Disaster Recovery Ordinance	No							
19) Real Estate Disclosure Requirement	X							Farming/ Military Base & Aircraft
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	X	2009		2009-63	Joint Base Land Use Committee, McQuire AFB	+		Flight Easements



9.26.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Environmental Resolutions./ Twp. Engineers Appointed Professionals
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Environmental Resolutions./ Twp. Engineers Appointed Professionals
3) Planners or engineers with an understanding of natural hazards	Y	Environmental Resolutions./ Twp. Engineers Appointed Professionals
4) NFIP Floodplain Administrator	N	N/A
5) Surveyor(s)	N	On Staff at Twp. Engineers Office
6) Personnel skilled or trained in GIS applications	Y	Police Department
7) Scientist familiar with natural hazards	N	N/A
8) Emergency Manager	Y	New Hanover OEM
9) Grant Writer(s)	Y	Twp. Engineers/ Police Dept.
10) Staff with expertise or training in benefit/cost analysis	Y	Twp. Administration

9.26.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	YES
2) Capital Improvements Project Funding	YES
3) Authority to levy taxes for specific purposes	YES – No Local Tax Rate
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	Yes
10) State mitigation grant programs	No
11) Other	N/A

9.26.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	9	11-1-2009
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of New Hanover's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.26.6 MITIGATION STRATEGY

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

9.26.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this Section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Conduct an engineering study to determine and implement improvements/maintenance of the existing stormwater management systems in flood prone areas					X	This engineering study was not able to be funded by the municipality due to budget restraints and reasons of economy and was discontinued

9.26.6.2 Hazard Vulnerabilities Identified

In the Township of New Hanover, an no residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 1 % is located within the 1% annual chance flood area. None of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of New Hanover has a total of 6 NFIP policies, 1 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
New Hanover (T)	6	2	\$889	0	0	1	1	5

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.26.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
NeH-1	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee, Planning, OEM, Floodplain Adm.	Medium	Low	Municipal Government, OEM and Floodplain Admin.	Short Term	Medium	PR
NeH-2	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
NeH-3	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
NeH-4	Obtain and install backup power sources at all critical facilities to include shelters.	N/A	All Hazards	1-2 1-5 3-2	Municipality engineering, OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
NeH-5	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipal Government, OEM with support from County, NJOEM, FEMA and surrounding	Medium	Low	Municipal Budget	Short Term	High	PR, ES

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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
					communities						
NeH-6	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipal Government, OEM with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
NeH-7	Continue to promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipal Government with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	On-going	Medium	PR
NeH-8	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	OEM with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
NeH-9	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk, OEM and government	Medium	Low	Municipal Budget	Short Term	High	PR
NeH-10	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	N/A	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	Short Term	Medium	PP
NeH-11	Evaluate benefits of participating in the Firewise Program	Existing	Wildfire	1-1 1-5 2-1 3-1 4-1 5-1	Municipal OEM	Medium	Low	Municipal Government, OEM	Short Term	Medium	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.26.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
NeH-1	7	Medium	Low	Yes	Yes	Yes	Medium
NeH-2	3	Medium	Medium	Yes	Yes	No	High
NeH-3	1	Medium	Medium	Yes	Yes	Yes	Medium
NeH-4	3	Medium	Medium	Yes	Yes	Yes	Medium
NeH-5	1	Medium	Low	Yes	Yes	Yes	High
NeH-6	1	High	Low – High	Yes	Yes	No	High
NeH-7	2	Medium	Medium	Yes	Yes	Yes	Medium
NeH-8	3	Medium	Low	Yes	Yes	Yes	Medium
NeH-9	3	Medium	Low	Yes	Yes	Yes	High
NeH-10	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
NeH-11	6	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.26.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.26.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of New Hanover has no additional risk vulnerabilities that need to be addressed at this time.

9.26.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of New Hanover is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of New Hanover has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.26-1: New Hanover Flood Exposure Map

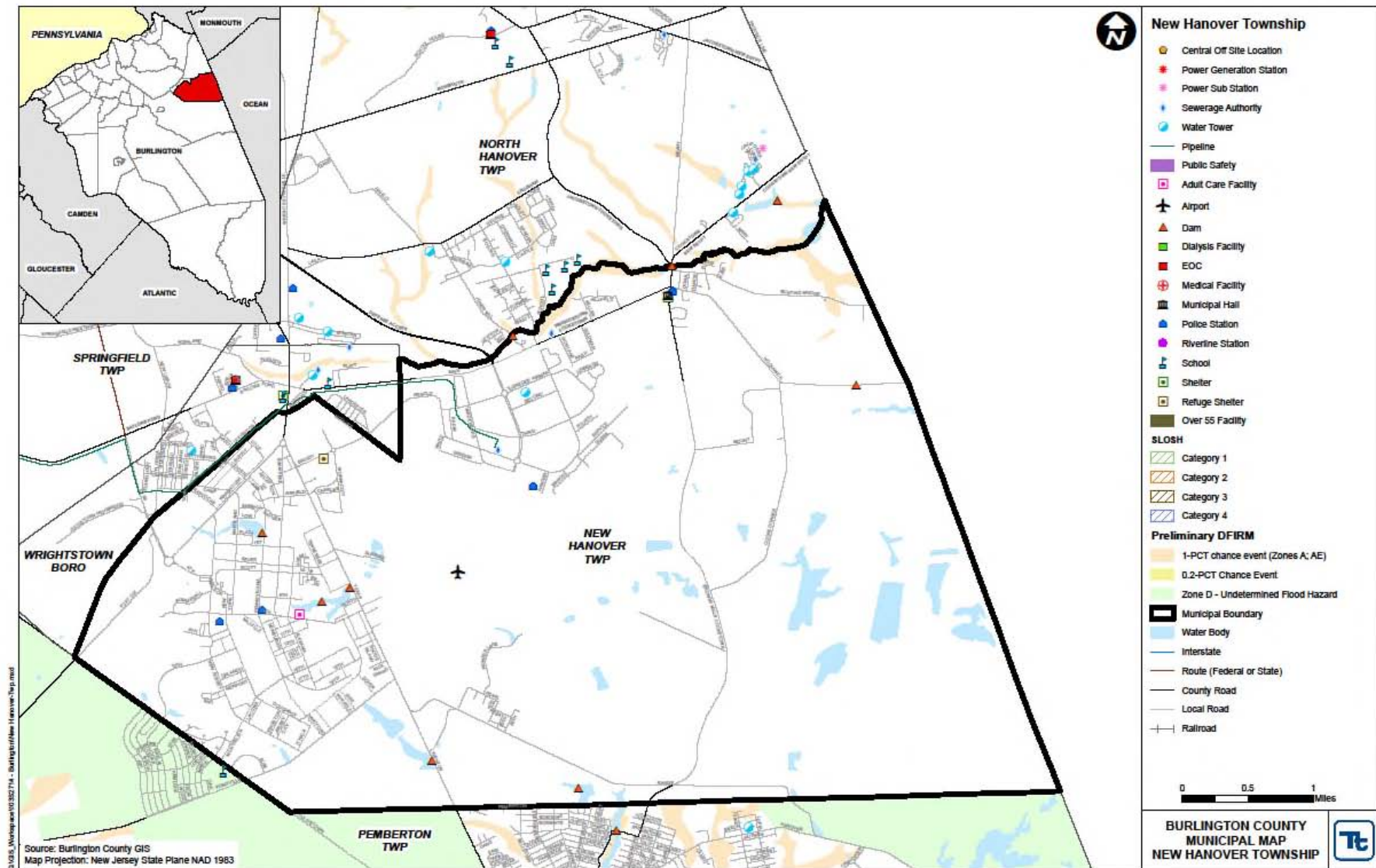
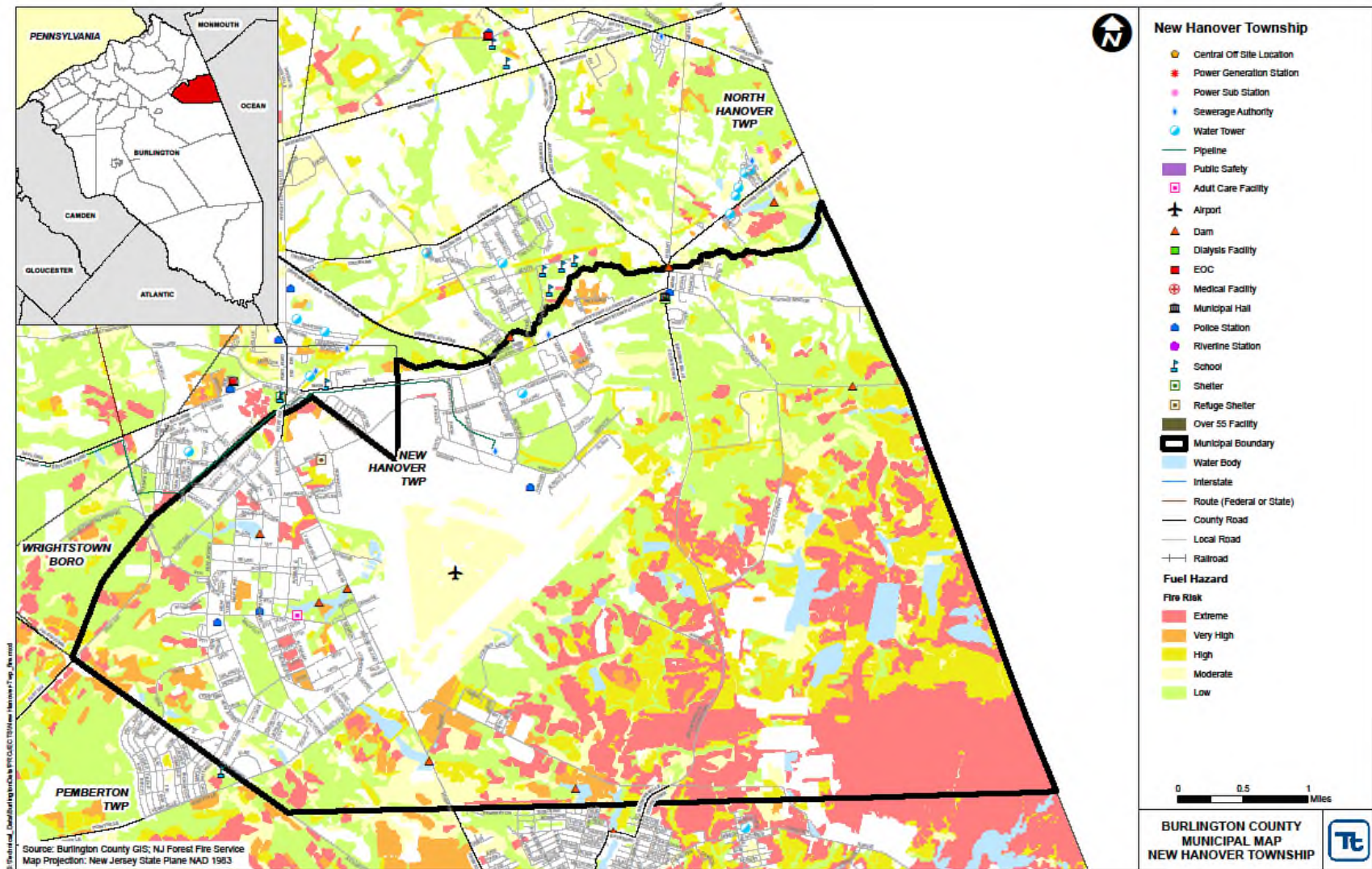


Figure 9.26-2: New Hanover Wildfire Fuel Map



9.26.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of New Hanover to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.26.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.27 Township of North Hanover

This section presents the jurisdictional annex for the Township of North Hanover.

9.27.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Mark Keubler Title: Chief of Police Address: 41 Schoolhouse Rd. Jacobstown NJ 08562 Phone Number: (732) 272-4249 Alt. Phone Number: (609) 758-3351 ext. 16 Fax Number (609) 758-1907 E-mail Address: mkeubler@northhanovertwp.com	Name: Budd Wells Title: Police Detective Address: 41 Schoolhouse Rd. Jacobstown NJ 08562 Phone Number: (609) 209-7037 Alt. Phone: (609) 758-3351 Ext. 26 Fax Number (609) 758-1907 E-mail Address: bwells@northhanovertwp.com

9.27.2 PROFILE

9.27.2.1 Population

The population of the Township of North Hanover is estimated to be 7,678, based on information gathered during the 2010 U.S. Census.

9.27.2.2 Location

The Township of North Hanover is located in the northeast portion of Burlington County. The Township is bordered by New Hanover and Wrightstown to the south, Springfield to the southwest, and Chesterfield to the west. In addition, The Township is bordered by the Ocean County municipality of Plumsted to the southeast, the Monmouth County municipality of Upper Freehold to the east, and the Mercer County municipality of Hamilton to the north.

9.27.2.3 Brief History

North Hanover Township was incorporated as a township by an Act of the New Jersey Legislature on April 12, 1905, from portions of New Hanover Township. Portions of the township were taken on March 4, 1918, to form Wrightstown.¹

9.27.2.4 Governing Body Format

North Hanover Township is governed under the Township form of government with a five-member Township Committee. The Township Committee is elected directly by the voters in partisan elections to serve three-year terms of office on a staggered basis, with one or two seats coming up for election each year. http://en.wikipedia.org/wiki/North_Hanover_Township,_New_Jersey - cite note-DataBook-3 At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

¹<http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

Under the Township form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint, including the township form, may appoint a municipal administration and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.27.2.5 Growth/Development Trends

The Township of North Hanover did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
N/A	N/A	N/A	N/A	N/A	N/A	N/A

9.27.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	The Township experienced localized power outages due to downed power lines and road closures as a result of storm water runoff, with downed trees and power lines. No increased negative fiduciary impact was realized.
Fire	FM-2695	Yes	May 15-19, 2007	No increased services or negative fiduciary impact was realized.
Winter Storm	DR-1873	Yes	December 19-20, 2009	Snowfall and winds caused downed power lines with localized outages. Transportation and public safety systems were disrupted with closed or severely compromised roads, creating threats to public safety and health. A negative fiduciary impact was realized in excess of \$12,700.00 in the form of public safety employee overtime, support services and equipment damaged or lost.
Winter Storm	DR-1889	Yes	February	Snowfall and winds caused downed power lines

²http://www.njslom.org/magart0307_p14.html

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			5-6, 2010	with localized outages. Transportation and public safety systems were disrupted with closed or severely compromised roads, creating threats to public safety and health. A negative fiduciary impact was realized in excess of \$12,700.00 in the form of public safety employee overtime, support services and equipment damaged or lost.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	The Township experienced localized power outages due to downed power lines and road closures as a result of storm water runoff, with downed trees and power lines. No increased negative fiduciary impact was realized.
Winter Storm	DR-1954	Yes	December 26-27, 2010	Significant snowfall and winds caused downed power lines with localized outages. Transportation and public safety systems were disrupted with closed or severely compromised roads, creating threats to public safety and health. A negative fiduciary impact was realized in excess of \$30,200.00, in the form of public safety employee overtime, support services and equipment damaged or lost.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Severe storm force winds significantly damaged trees and brought down power line throughout the Township causing localized power outages. Roads were severely compromised with flooding, debris and downed power lines threatening public health and safety by limiting access throughout the area limiting public safety access in residential areas. A negative fiduciary impact was realized in excess of \$34,800.00, in the form of public safety employee overtime, support services and equipment damaged or lost.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Hurricane force winds, rain, snow, and icing caused downed trees, power and utility lines with near complete power outage throughout the Township. Severely compromised roadways, disrupted transportation and public safety systems, significantly limiting access to residential and business districts for an extended period of time, requiring sheltering and emergency services for residents. A negative fiduciary impact was realized in excess of \$67,100.00, in the form of public safety employee overtime, support services and equipment damaged or lost.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.



9.27.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of North Hanover.

Natural 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
Flood	1% Annual Chance: \$15,522,000	Frequent	18	Medium ⁱ
Severe Storm	100-Year MRP: \$714,968 500-Year MRP: \$5,512,851 Annualized Loss: \$93,182	Frequent	30	Medium ⁱ
Severe Winter Storm	1% of GBS: \$4,199,420 5% of GBS: \$20,997,100	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low ^g
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$569,813,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$291,341 2,500-Year MRP: \$6,481,531 Annualized Loss: \$6,011	Rare	6	Medium ^h
Landslides	Not available	Rare	6	Low

Note

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- 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
- The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- Loss estimates are structural values only; does not include the value of contents.
- Loss estimates represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.
- Client input suggested High Risk, while project team estimates Low Risk.
- Client input suggested Low Risk, while project team estimates Medium Risk.
- Client input suggested High Risk, while project team estimates Medium Risk.

9.27.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of North Hanover indicated that the municipality has a moderate planning, regulatory, administrative, technical, and limited fiscal capability; moderate community resiliency and community political capability; with a willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.27.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of North Hanover.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	Yes	Adopted 1977	-	Twp. L.O. Chapter 8	Construction Official	+	N/A	Updated 2006 to reflect fee schedule changes per DCA fee schedule
2) Zoning Ordinance	Yes	Adopted 1979	-	Twp. L.O. Chapter 16	Zoning Board	+	N/A	Updated 2013 to clarify several issues
3) Subdivision Ordinance	Yes	Adopted 1976	-	Twp. L.O. Chapter 15	Land Use Board	+	N/A	Updated 2010
4) NFIP Flood Damage Prevention Ordinance	Yes	Adopted 1986	-	Twp. L.O. Chapter 8-050	Township Engineer	+	N/A	Update information unknown
4a) Cumulative Substantial Damages	-	-	-	-	Township Engineer		N/A	Unknown
4b) Freeboard	-	-	-	-	Township Engineer		N/A	Unknown
5) Growth Management	Yes	Adopted 1979	-	Twp. L.O. Chapter 16-070	Township Council	+	N/A	Updated 2013
6) Floodplain Management / Basin Plan	Yes	Adopted 1979	-	Twp. L.O. Chapter 16-180	Township Engineer	+	N/A	Updated 2013

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
7) Storm water Management Plan/Ordinance	Yes	Adopted 1996	-	Twp. L.O. Chapter 11-050	Township Engineer	+	N/A	No Update
8) Comprehensive Plan / Master Plan/ General Plan	Yes	Adopted 1972	-	Twp. Resolution	Township Council	+	N/A	Updated 2012
9) Capital Improvements Plan	Yes	Adopted 1996	-	Twp. Resolution	Chief Financial Officer	+	N/A	Updated annually during budget process
10) Site Plan Review Requirements	Yes	Adopted 1996	-	Twp. L.O. Chapter 15-070	Land Use Board	+	N/A	Updated 2010
11) Open Space Plan	Yes	Adopted 1977	-	Twp. L.O. Chapter 16-350	Land Use Board	+	N/A	Updated 2013
12) Stream Corridor Management Plan	Yes	Adopted 1977	-	Twp. L.O. Chapter 15-085	Township Engineer	+	N/A	Updated 2006
13) Watershed Management or Protection Plan	Yes	Adopted 1977	-	Twp. L.O. Chapter 15-085	Township Engineer	+	N/A	Updated 2006
14) Economic Development Plan	Yes	Adopted 1996	-		Chief Financial Officer	+	N/A	No Update
15) Comprehensive Emergency Management Plan	Yes	Adopted 1994	-	Twp. L.O. Chapter 3-060	Office of Emergency Management	+	N/A	No Update Currently under review
16) Emergency Response Plan	No	-	Yes		Office of	0	N/A	Presently under

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
				-	Emergency Management			development
17) Post Disaster Recovery Plan	-	-	Yes	-	Office of Emergency Management	0	N/A	Presently under Development
18) Post Disaster Recovery Ordinance	No	-	-	-	Office of Emergency Management	0	N/A	Program Undetermined
19) Real Estate Disclosure Requirement	Yes	2009	-	N.J.S.A. Chapter 5-70	Township Fire Marshal	+	N/A	No Update or Supporting Local Ordinance
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	No	-	-	-	Township Council	-	N/A	-

9.27.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Township Engineer Township Planner
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Township Construction Official Township Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Township Engineer Township Construction Official
4) NFIP Floodplain Administrator	Y	Township Engineer
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	Y	Township Engineer
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Emergency Management Coordinator
9) Grant Writer(s)	N	
10) Staff with expertise or training in benefit/cost analysis	Y	Chief Financial Officer

9.27.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	YES
2) Capital Improvements Project Funding	YES
3) Authority to levy taxes for specific purposes	YES
4) User fees for water, sewer, gas or electric service	NO
5) Impact fees for homebuyers or developers of new development/homes	YES
6) Incur debt through general obligation bonds	YES
7) Incur debt through special tax bonds	YES
8) Incur debt through private activity bonds	NO
9) Withhold public expenditures in hazard-prone areas	NO
10) State mitigation grant programs	YES
11) Other	UNK

9.27.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	N/P	
Building Code Effectiveness Grading Schedule (BCEGS)	3	2008
Public Protection	-	-
Storm Ready	N/P	
Firewise	N/P	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of North Hanover's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.27.6 MITIGATION STRATEGY

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

9.27.6.1 Past Mitigation Actions/Status

The Township of North Hanover did not participate in the 2008 Hazard Mitigation Plan. As a result, no mitigation actions were previously identified for the Township.

9.27.6.2 Hazard Vulnerabilities Identified

The Township of North Hanover has appointed its Township Engineer, Mr. Justin Gibson as Floodplain Administrator. Mr. Gibson is of the Engineering Firm, Remington Vernick & Arango, located at the Presidential Center, Lincoln Building, Suite 600, 101 Route 130 in Cinnaminson N.J. 08077. Mr. Gibson's phone number there is 856-303-1245.

In the Township of North Hanover, an estimated 673 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 6% is located within the 1% annual chance flood area. A total of \$33,483,000 (4.9%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of North Hanover has a total of 3 NFIP policies, 0 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
North Hanover (T)	3	1	\$13,060	0	0	1	1	2

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate					
Name	Municipality	Type	Exposure	Potential Loss from 1% Flood Event	Potential Loss from 0.2% Flood Event

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			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source:HAZUS-MH2.1

Notes:

- = No loss (calculated byHAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.27.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
NoH-1	Establish and implement a tree maintenance and clearing program along roadways in high hazard areas	N/A	All Storm types Wild Fire	1-5 4-1	Lead: OEM Support: Public Works, NJDEP	High	Medium	General Fund PDM Grant Search	Continuous	Medium	NR
NoH-2	Develop requirements on types of facilities that require backup power.	New and Existing	All Storm types	1-1 1-5 3-1	Lead: OEM Support: Twp. Solicitor	Medium	Low	General Fund	Short	High	PR
NoH-3	Acquire back-up power generators for critical facilities.	New and Existing	All Storm types	1-2 1-5 3-2	Lead: OEM Support: Public Works	Low	High	Local Capital Improvements PDM Grant Search	Long	Low	ES
NoH-4	Conduct a feasibility study to determine advantages of obtaining an FCC AM Radio license to establish local AM radio transmission capability for providing local residents with specific related emergency messages in real time.	N/A	All Storm types Wild Fire Flood	1-1 1-5 5-1	Lead: OEM Support: Undetermined	Medium	Low	General Fund PDM Grant Search	Short	Medium	PE
NoH-5	Develop and implement a residents disaster preparation outreach program, including education on proper installation and/or use of backup power	N/A	All Storm types Flood Wild Fire	1-5 5-1 5-3	Lead: OEM Support: Undetermined	High	Low	General Fund PDM Grant Search	Continuous	High	ES
NoH-6	Develop and implement and support a volunteer	N/A	All Storm types Flood	1-1	Lead: OEM Support: Undetermined	Medium	Low	General Fund PDM Grant Search	Continuous	High	ES

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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
	Community Emergency Response Team (CERT)		Wild Fire								
NoH-7	Develop and implement a public outreach program for the education of residents on the risks of wildfire including personal mitigation techniques and strategies	N/A	Wild Fire	1-5 5-1 5-3	Lead: OEM Support: Local Fire Service	Medium	Medium	General Fund PDM Grant Search	Continuous	High	PE
NoH-8	Develop a Local Ordinance imposing water use restrictions for the washing of vehicles and landscaping during times of declared water emergency shortages	New and Existing	Drought	1-4 1-5	Lead: OEM Support: Twp. Solicitor	Low	Low	General Fund	Short	High	PR
NoH-9	Develop and implement a program for the purchase or promotion of NOAA weather radios for critical facilities and residents.	N/A	All Storm types Wild Fire Flood	1-1 1-5 3-1	Lead: OEM Support: Undetermined	Medium	Medium	PDM Grant Search	Long	High	ES
NoH-10	Develop and implement a maintenance strategy program for local fire department drafting access locations.	New and Existing	Wild Fire	1-1 3-1	Lead: OEM Support: Local Fire Service	High	Low	General Fund PDM Grant Search	Continuous	High	NR
NoH-11	Develop and implement a maintenance program for existing storm water removal systems	N/A	Flood All Storm types	1-1 1-4 3-1	Lead: OEM Support: Public Works	Medium	Medium	General Fund FMA Grant Search	Continuous	Medium	NR
NoH-12	Identify and map key	N/A	All Storm types	1-1 1-5	Lead: OEM Support: local	High	Low	General Fund PDM Grant	Short	High	ES



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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
	access roadways for the evacuation of residents in times of emergency.		Wild Fire Flood	3-1	Fire /EMS Services			Search			
NoH-13	Identify and map roadway hazardous snow accumulations sites while developing mitigation strategies	N/A	Winter Storms	1-1 3-1 4-1	Lead: OEM Support: Burlington County Highway Dept.	High	Medium	PDM Grant Search	Long	High	ES
NoH-14	Develop and implement administrative policy strategies to ensure participation as a Storm Ready Community	New and Existing	All Storm types	1-1 1-5 3-1	Lead: OEM Support: Undetermined	Medium	Medium	General Fund PDM Grant Search	Long	High	PE
NoH-15	Develop and implement administrative policy strategies to ensure participation in Firewise Program	New and Existing	Wild Fire	1-1 1-5 2-1 3-1 4-1 5-1	Lead: OEM Support: Undetermined	Medium	Medium	General Fund PDM Grant Search	Long	High	PE
NoH-16	Conduct an engineering study to determine and implement improved drainage in flood prone areas.	N/A	Flood	1-1 1-3 3-1	Lead: OEM Support: Twp. Engineer B.C. Hgwy. Dept.	Medium	High	FMA Grant Search	Long	Medium	NR
NoH-17	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
NoH-18	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM,	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE

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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
	• Hazard mitigation				FEMA						
NoH-19	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR
NoH-20	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
NoH-21	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
NoH-21	Promote the participation of Floodplain Administrator within the planning process and other activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.

4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.27.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
NoH-1	2	High	Medium	Yes	Yes	No	Medium
NoH-2	3	Medium	Low	Yes	Yes	Yes	High
NoH-3	3	Low	High	Yes	Yes	No	Low
NoH-4	3	Medium	Low	Yes	Yes	No	Medium
NoH-5	3	High	Low	Yes	Yes	No	High
NoH-6	1	Medium	Low	Yes	Yes	No	High
NoH-7	3	Medium	Medium	Yes	Yes	No	High
NoH-8	2	Low	Low	Yes	Yes	Yes	High
NoH-9	3	Medium	Medium	Yes	Yes	No	High
NoH-10	2	High	Low	Yes	Yes	Yes	High
NoH-11	3	Medium	Medium	Yes	Yes	Yes	Medium
NoH-12	3	High	Low	Yes	Yes	Yes	High
NoH-13	3	High	Medium	Yes	Yes	No	High
NoH-14	3	Medium	Medium	Yes	Yes	Yes	High
NoH-15	6	Medium	Medium	Yes	Yes	Yes	High
NoH-16	3	Medium	High	Yes	Yes	No	Medium
NoH-17	7	Medium	Low	Yes	Yes	Yes	Medium
NoH-18	3	Medium	Medium	Yes	Yes	No	High
NoH-19	1	Medium	Medium	Yes	Yes	Yes	Medium
NoH-20	1	Medium	Low	Yes	Yes	Yes	High
NoH-21	1	High	Low – High	Yes	Yes	No	High
NoH-22	2	Medium	Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.27.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.27.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of North Hanover has no additional identified risk vulnerabilities that need to be addressed at this time.

9.27.10HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of North Hanover is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of North Hanover has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.27-1: North Hanover Municipal Map

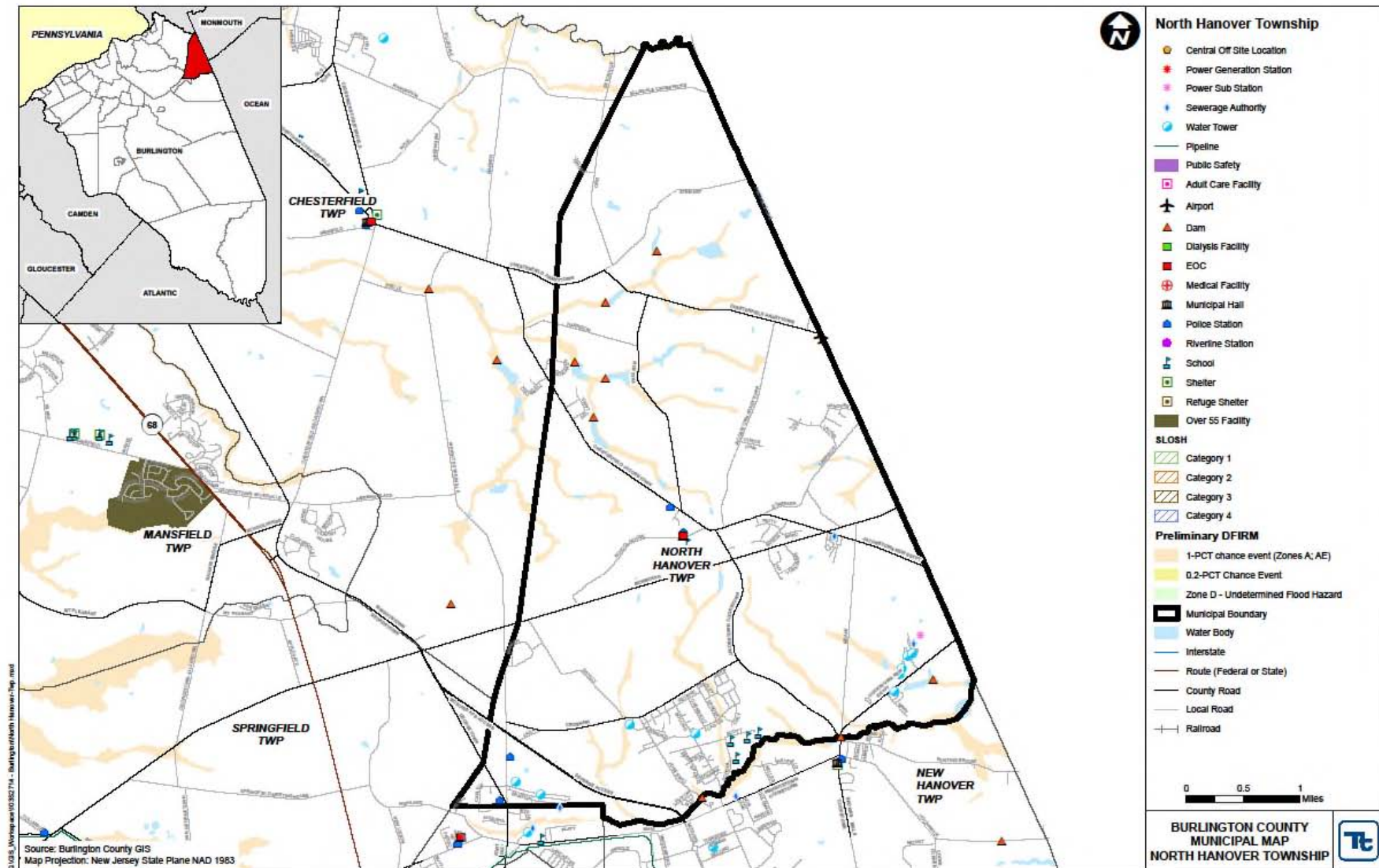
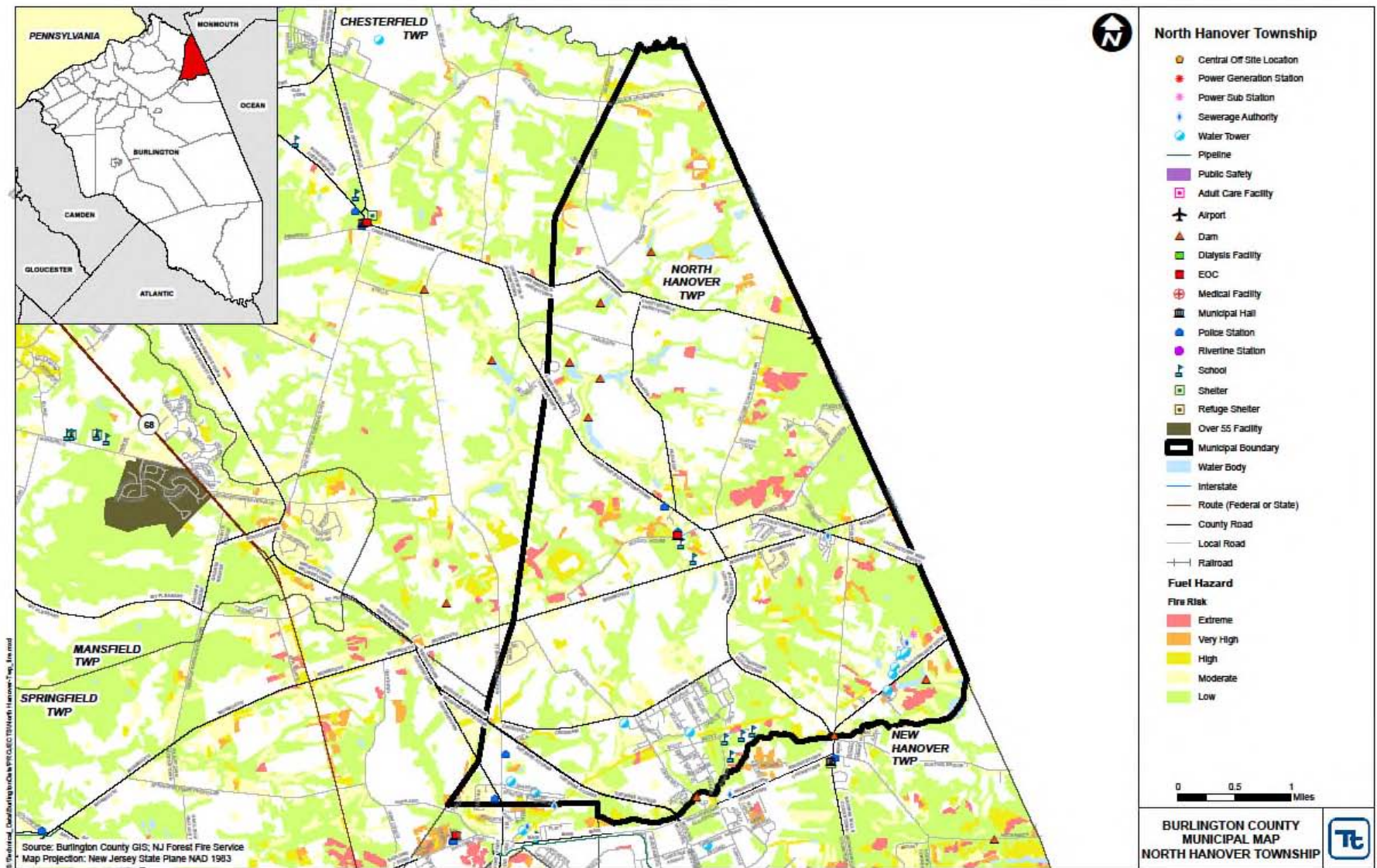


Figure 9.27-2: North Hanover Wildfire Fuel Map



9.27.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of North Hanover to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.27.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.28 Borough of Palmyra

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

9.28.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Tracy Kilmer Department: Palmyra Office of Emergency Management Address: 20 W. Broad Street, Palmyra, NJ 08065 Phone Number: (856) 829-1096 Fax Number: (856) 829-4096 E-mail Address: tkilmer@boroughofpalmyra.com	Name: Richard Derby Department: Palmyra Office of Emergency Management Address: 20 W. Broad Street, Palmyra, NJ 08065 Phone Number: (856) 868-1305 Fax Number: (856) 829-4096 E-mail Address: rderby@boroughofpalmyra.com

9.28.2 PROFILE

9.28.2.1 Population

The population of the Borough of Palmyra is estimated to be 7,398, based on information gathered during the 2010 U.S. Census.

9.28.2.2 Location

Palmyra borders Riverton to the east, Cinnaminson Township to the south, Pennsauken - Camden County to the west, and the Delaware River to the north. Across the Delaware, it borders the Tacony section of Philadelphia to which it is connected via Route 73 by the Tacony-Palmyra Bridge. This bridge is named for the two communities connected by the bridge.

9.28.2.3 Brief History

The area that is now Palmyra was settled in the late 17th century by Swedes, marking the northernmost border of New Sweden. This remained a farming area until after the building of the Camden and Amboy Railroad in 1834, after which railroad workers bought lots along the railroad and built their homes there. The community was originally known as Texas, but a local landowner, Isaiah Toy, a descendant of the original Swedish settlers, wanted to have a post office established, and felt the name Texas undignified. Toy, a stockholder in the Camden and Amboy Railroad, convinced the railroad to change the name of the station in 1849 to Palmyra, which came from his love of ancient history. Palmyra was the name of an important city in ancient times located in central Syria. The post office was established in 1851. Palmyra, along with Bordentown, Burlington, Moorestown, and Mount Holly, established its high school in the late 1890s, making it one of the oldest high schools in Burlington County and in New Jersey.

The town was laid out in 1850, when Joseph Souder's land was broken up into building lots to pay his debts. The street names match those of Center City Philadelphia – Market, Arch, Race, and Vine (from south to north), and Front Street and numbered streets from the Delaware River. What is now Palmyra was part of Chester Township, one of the original townships in Burlington County. Palmyra became a

part of Cinnaminson Township when that township was set off from Chester in 1860. Palmyra Borough was set off from Cinnaminson in 1894, and Palmyra was incorporated as a borough in 1923.¹

9.28.2.4 Governing Body Format

Palmyra is governed under the Borough form of New Jersey municipal government. The government consists of a Mayor and a Borough Council comprising six council members, with all positions elected at large. A Mayor is elected directly by the voters to a four-year term of office. The Borough Council consists of six members elected to serve three-year terms on a staggered basis, with two seats coming up for election each year.

The mayor retains all general law authority, presides over council meetings and can vote in the case of a tie. The mayor appoints, with the advice and consent of council, all subordinate officers of the municipality. The council is the legislative body of the Borough. All executive responsibilities not placed in the office of the Mayor by general law or the Borough law remain with the council. A Borough may appoint an administrator and delegate all or a portion of the executive responsibilities to him/her. The council may also adopt an administrative code, prescribing how the council shall perform its duties.²

9.28.2.5 Growth/Development Trends

The Borough of Palmyra did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
N/A	N/A	N/A	N/A	N/A	N/A	N/A

9.28.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

¹ <http://boroughofpalmyra.com/about>

² http://www.njslom.org/magart0307_p14.html

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	None
Winter Storm	DR-1889	Yes	February 5-6, 2010	Record snowfall disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	This severe winter storm event disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Hurricane force winds severely damaged trees throughout the Borough. Roads were severely compromised with flooding and debris an threatened public health and safety by limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	This event produced hurricane force winds, rain, snow, and damaging storm surge which caused downed trees, utility lines, and related damage throughout Burlington County. Sheltering and emergency services were provided for residents.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.28.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Borough of Palmyra.

Natural 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
Flood	1% Annual Chance: \$19,807,000	Frequent	18	Medium ^h
Severe Storm	100-Year MRP: \$1,577,661 500-Year MRP: \$5,548,368 Annualized Loss: \$78,752	Frequent	48	High
Severe Winter Storm	1% of GBS: \$5,826,240 5% of GBS: \$29,131,200	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low ^g
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$8,089,000	Frequent	18	Medium ⁱ
Drought	Not available	Occasional	12	Low ^g
Earthquake	500-Year MRP: \$342,248 2,500-Year MRP: \$8,222,910 Annualized Loss: \$7,390	Rare	6	Medium ⁱ
Landslides	Not available	Occasional	36	High

Note

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- 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
- The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- Loss estimates are structural values only; does not include the value of contents.
- Loss estimates represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.
- Client input suggested Medium Risk, while project team estimates Low Risk.
- Client input suggested High Risk, while project team estimates Medium Risk.
- Client input suggested Low Risk, while project team estimates Medium Risk.

9.28.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Borough of Palmyra indicated that the municipality has moderate planning, regulatory, administrative, technical, community resiliency and community political capability, and a moderate fiscal capability; and a moderate political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.28.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Palmyra.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop- ment					
1) Building Code	X	Adopted 1961 Updated 2009	-	Borough Code Chapter 95	Construction Department	+	+	Updated to reflect fee schedule changes per DCA fee schedule.
2) Zoning Ordinance	X	Updated 2013	-	Stand-alone ordinance	Zoning Department	+	+	Updates to include changes in Accessory Buildings and Signage requirements.
3) Subdivision Ordinance	X	Adopted with original zoning document	-	Included within the Zoning Ordinance Section 400, Page 38	Zoning/ Planning Board	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	Updated 2009	-	Borough Code Chapter 126	Construction Department	+	+	Updated to included requirements by CRS review.
4a) Cumulative Substantial Damages	N/A		-					
4b) Freeboard	X	2/2/09	-	Borough Code Chapter 126- 12(B)	Construction Department	+	+	Updated for CRS
5) Growth Management	N/A	-	-	-	-	-	-	
6) Floodplain Management / Basin Plan	X	Updated 2009	-	Borough Code Chapter 126- 12(1)	Construction Department	+	+	
7) Stormwater Management	X	Updated	-	Borough	DPW			

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop- ment					
Plan/Ordinance		2006		Chapter 236				
8) Comprehensive Plan / Master Plan/ General Plan	X	Updated 2/27/2001	-		Land Use Board	+	+	
9) Capital Improvements Plan	X	Updated 3/9/2013			Finance	+	+	Updated annual during budget process
10) Site Plan Review Requirements	X	Updated 2/27/2001			Land Use Board			
11) Open Space Plan	X	Updated 2/27/2001			Land Use Board	+	+	
12) Stream Corridor Management Plan	N/A		no					
13) Watershed Management or Protection Plan	N/A		no	Chapter 17	Borough Council/EDC Committee			
14) Economic Development Plan	X	Ordinance 2007-12	-					
15) Comprehensive Emergency Management Plan	X	Updated 2008	-		OEM	+	+	Our plan is currently being updated
16) Emergency Response Plan	N/A							
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.28.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Administrator/Zoning/Planning Board
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Administrator/Borough Council
3) Planners or engineers with an understanding of natural hazards	Y	Administrator
4) NFIP Floodplain Administrator	Y	Administrator
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Administrator
9) Grant Writer(s)	Y	Administrator/Borough Council
10) Staff with expertise or training in benefit/cost analysis	Y	Administrator

9.28.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	Yes
11) Other	

9.28.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	Yes	2009
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	2008
Public Protection	NP	
Storm Ready	Yes	2007
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Borough of Palmyra's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.28.6 MITIGATION STRATEGY

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

9.28.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Delaware River Tidal Retaining Wall					X	Repair of the River wall which has suffered devastating scouring effects due to tidal fluctuation and storm effects which have eroded the wall into a condition of disrepair – discontinued due to lack of funding
Parry Ave. Project			X			This project begun in 2010. Due to funding constraints half of Parry Ave was completed and the other half is out for bid. The Borough is hoping to begin by the end of this year. The Ave. received refurbished inlets, sewer repairs, new sewer laterals boxes, drainage prevention measures including regarding of the roadway and new curbing.
Charles Street Improvements		X				Reconstruction of Charles Street; includes the installation of new inlet grates and heads, sidewalk, driveway and apron repair/replacement.
Palmyra Sewer Plant		X				The Borough has received funding through the New Jersey State Funding Trust to begin this project. Improvements will be made to the pumping station to mitigate flooding. This to include drainage, razing the pump station components. The estimated two year project has been designed and is currently out for bid.
Gate/Flapper Valve (Palmyra Harbour/Palmyra Dr.)			X			The Gate/Flapper Valve is inoperable due to silting in of debris. In order to obtain proper access to the gate valve the gate had to be cleared of debris. In order to due this three beavers had to be removed. Beaver removal is complete and bidding will begin for cleaning the debris and then replacement of the valve and other related components of the flapper valve system.

9.28.6.2 Hazard Vulnerabilities Identified

The Borough noted issues with the Borough Waste Water Treatment Plant Storm Drain Outfall.

In the Borough of Palmyra, estimated 400 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 18% is located within the 1% annual chance flood area. A total of \$15% of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Borough of Palmyra has a total of 240 NFIP policies, 126 of which are located within the 1% annual chance flood area. FEMA has identified 2 Repetitive Loss (RL) properties and 0 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Borough of Palmyra	188	22	\$152,868	1	1	58	144	44

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
Tacony Palmyra Bridge Police	Palmyra (B)	Police	X	X	8.1	12.3	480

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.28.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
PA-1	Install an emergency generator at the Palmyra Community Center.	Existing	All	1-1 1-5	Lead: Palmyra Borough Support: NJOEM	High	Medium	FEMA PDM with local Capital Improvements Budget 25% cost share	Short Term	High	PR
PA-2	Upgrade tidal Riverwall at Palmyra Harbour, Cinnaminson Ave. and Harbour Dr., and Bank Ave.	Existing	Flood	1-1 2-1 3-1	Lead: Palmyra Borough Support: NJOEM	High	High	FEMA PDM with local Capital Improvements Budget 25% cost share	Short Term	High	SP
PA-3	Install Tide Gate/Flapper Valve and other essential stormwater equipment at Palmyra Harbour, Palmyra Drive.	New	Flood	1-1 2-1 3-1	Lead: Palmyra Borough Support: NJOEM	High	High	FEMA PDM with local Capital Improvements Budget 25% cost share	Short Term	High	SP
PA-4	Drainage, curbs, sidewalks, stormwater improvements to East Charles Street	Existing	Flood	1-1 2-1 3-1	Lead: Palmyra Borough	Medium	Medium	The Borough is seeking State granting opportunities	Short Term	Medium	PR
PA-5	Drainage, stormwater, to alleviate flooding conditions at along two blocks of W. 2 nd St. Improvements will be on two blocks from Orchard Ave. to Market St.	new	Flood	1-1 2-1 3-1	Lead: Palmyra Borough	Medium	High	The Borough should receive a Small Cities Grant for \$400,000.	Short Term	Low	PR
PA-6	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New and Existing	All	1-4	Lead: Palmyra Borough	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
PA-7	Evaluate benefits of participating in CRS	Existing	All	1-1 1-5	Twp. Committee;	Medium	2,500/year	Twp./Public	On-going	Medium	PR

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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
	program			2-1 2-2 3-1 4-1 5-1	Planning						
PA-8	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
PA-9	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
PA-10	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
PA-11	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
PA-12	Promote the participation of Floodplain Administrators within the planning process and other activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	PR
PA-13	Enhance resilience to severe storms by continuing to participate in the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
PA 14	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short Term	H	PR
PA-15	Address dangerous trees threatening people and	NA	Severe Storm,	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP

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
	property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.		Severe Winter Storm								
PA-16	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.28.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
PA-1	2	High	Medium	Yes	Yes	Yes	High
PA-2	3	High	High	Yes	Yes	Yes	High
PA-3	3	High	High	Yes	Yes	Yes	High
PA-4	3	Medium	Medium	Yes	Yes	Yes	Medium
PA-5	3	Medium	High	No	Yes	Yes	Low
PA-6	1	High	Low – High	Yes	Yes	Yes	High
PA-7	7	Medium	Low	Yes	Yes	Yes	Medium
PA-8	3	Medium	Medium	Yes	Yes	No	High
PA-9	1	Medium	Medium	Yes	Yes	Yes	Medium
PA-10	3	Medium	Medium	Yes	Yes	Yes	Medium
PA-11	1	Medium	Low	Yes	Yes	Yes	High
PA-12	2	Medium	Medium	Yes	Yes	Yes	Medium
PA-13	3	Medium	Low	Yes	Yes	Yes	Medium
PA-14	3	Medium	Low	Yes	Yes	Yes	High
PA-15	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
PA-16	1	High	Low	Yes	Yes	Yes	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.28.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.2.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Borough of Palmyra has no additional risk vulnerabilities that need to be addressed at this time.

9.2.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Borough of Palmyra is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is 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 Palmyra has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.0, Volume I of this plan.

Figure 9.28-1: Palmyra Flood Exposure Map

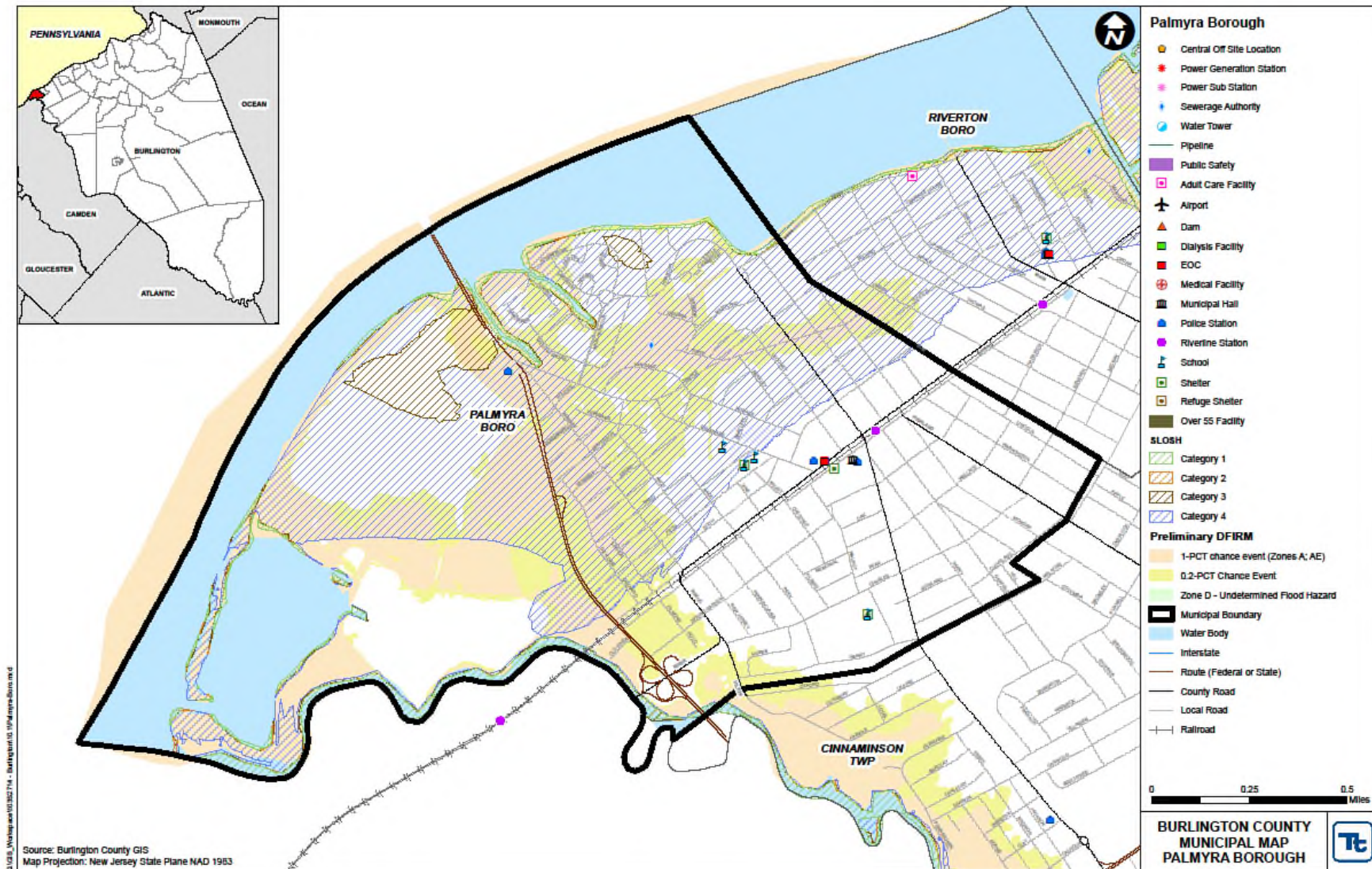
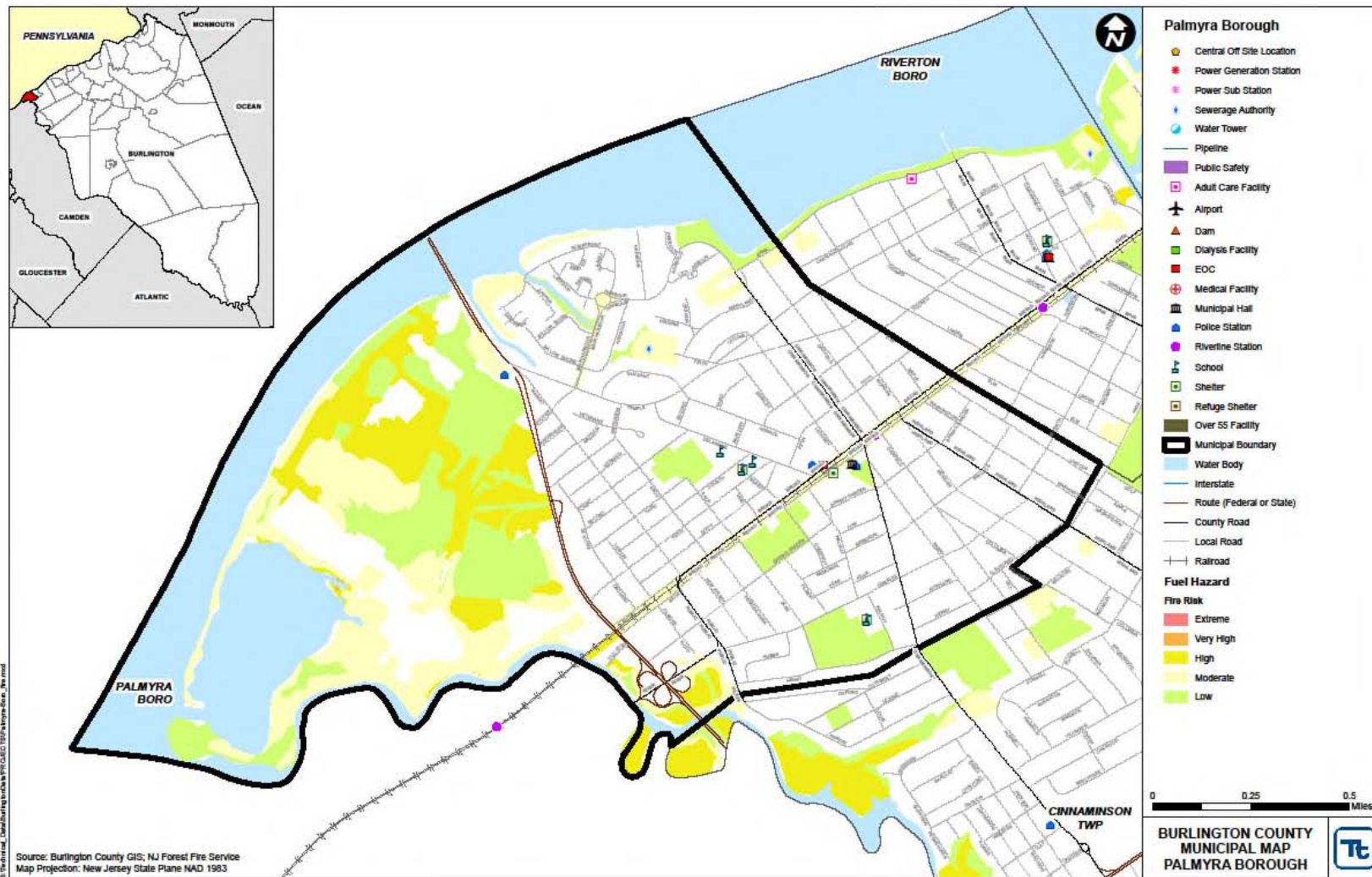


Figure 9.28-2: Palmyra Wildfire Fuel Map



9.28.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Borough of Palmyra to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

(Check which apply and add explanations, if required)

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	X

9.28.12 ADDITIONAL COMMENTS

No additional comments at this time.

9.29 Borough of Pemberton

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

9.28.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Chad Bozoski Title: Emergency Management Coordinator / Fire Chief Address: 50 Egbert Street, Pemberton, NJ 08068 Phone Number: (609) 668-8876 Fax Number: (609) 894-9417 E-mail Address: gwfd1900@yahoo.com	Name: Donna Mull Title: Borough Clerk Address: 50 Egbert Street, Pemberton, NJ 08068 Phone Number: (609) 894-8222 Fax Number: (609) 894-9417 E-mail Address: dmull@pemberton.comcast.biz.net

9.29.2 PROFILE

9.29.2.1 Population

The population of the Borough of Pemberton is estimated to be 1,409, based on information gathered during the 2010 U.S. Census.

9.29.2.2 Location

Pemberton Borough is surrounded by Pemberton Township in the central portion of Burlington County. The Borough is comprised of approximately 0.60 square miles, of which, 0.585 square miles of it is land and 0.017 square miles of it is water.¹ The center of the Borough of Pemberton is located on a ridge of land between the North Branch of the Rancocas to the south and Budd's Run to the north.²

9.29.2.3 Brief History

Like many other Burlington County towns, Pemberton owes the initial impetus for its development to water powered industry. The first to exploit Pemberton's water resources for industrial use was David Budd, who had a mill on Budd's Run as early as 1740. In 1752, Budd joined with three other entrepreneurs to form the New Mills Company.

The company not only built saw and grist mills on the Rancocas, but also planned a company town. Lots were laid out and allocated to the four owners. Although the distribution and size of these lots did not ultimately determine the configuration of later building lots, it did establish a nucleus for the town along the river bank and the present Hanover Street.

In December of 1826, the Borough of Pemberton was officially incorporated by an act of the New Jersey Legislature. There was a store, a school, and three hotels, which may have served as boarding houses for unmarried workers.

¹ http://www.census.gov/geo/maps-data/data/docs/gazetteer/2010_place_list_34.txt

² <http://www.pembertonborough.us/historical-information.html>

By 1785, there were about 70 dwellings in the town; by 1834, the number had increased to about 100. Industry continued to flourish.

Pemberton's economy shifted during the second half of the 19th century from industry to processing of agricultural products and services for the surrounding area. Situated between fertile farmland to the west and the pine barrens to the east, and with a good transportation system, Pemberton became a distribution point for such products as cranberries and blueberries. It was only after World War II that the business district began to decline because of competition from office parks and shopping malls.³

9.29.2.4 Governing Body Format

Pemberton Borough is governed under the Borough form of New Jersey municipal government. The government consists of a Mayor and a Borough Council comprising six council members, with all positions elected at large. A Mayor is elected directly by the voters to a four-year term of office. The Borough Council consists of six members elected to serve three-year terms on a staggered basis, with two seats coming up for election each year.

The mayor retains all general law authority, presides over council meetings and can vote in the case of a tie. The mayor appoints, with the advice and consent of council, all subordinate officers of the municipality. The council is the legislative body of the Borough. All executive responsibilities not placed in the office of the Mayor by general law or the Borough law remain with the council. A Borough may appoint an administrator and delegate all or a portion of the executive responsibilities to him/her. The council may also adopt an administrative code, prescribing how the council shall perform its duties.⁴

9.29.2.5 Growth/Development Trends

The Borough of Pemberton did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

9.29.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms	DR-1694	Yes	April 14-20,	None

³ <http://www.pembertonborough.us/historical-information.html>

⁴ http://www.njslom.org/magart0307_p14.html

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
and Inland/Coastal Flooding (also identified as a Nor'Easter)			2007	
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	None
Winter Storm	DR-1889	Yes	February 5-6, 2010	Record snowfall disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	This severe winter storm event disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Hurricane force winds severely damaged trees throughout the Borough. Roads were severely compromised with flooding and debris and threatened public health and safety by limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	This event produced hurricane force winds and rain which caused downed trees, utility lines, and related damage throughout the Borough. Sheltering and emergency services were provided for residents.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.29.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Borough of Pemberton.

Natural 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
Flood	1% Annual Chance: \$1,090,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$202,708 500-Year MRP: \$1,660,510 Annualized Loss: \$20,583	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$1,106,470 5% of GBS: \$5,532,350	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$36,580,000	Frequent	36	High
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$66,456 2,500-Year MRP: \$1,551,519 Annualized Loss: \$1,338	Rare	6	Medium
Landslides	Not available	Rare	6	Low

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.29.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Borough of Pemberton indicated that the municipality has moderate planning, regulatory, administrative, technical, community resiliency and community political capability, and a moderate fiscal capability; and a willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.29.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Pemberton.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	Y	3/21/77	N	Chapter 77	Construction Office	N/A	N/A	
2) Zoning Ordinance	Y	1/29/79	N	Chapter 210	Zoning	N/A	N/A	
3) Subdivision Ordinance	Y	4/16/79	N	Chapter 179	Planning Board	N/A	N/A	
4) NFIP Flood Damage Prevention Ordinance	Y	9/17/79	N	Chapter 105	Borough	N/A	N/A	
4a) Cumulative Substantial Damages	N							
4b) Freeboard	N							
5) Growth Management	Y	4/16/79	N	Chapter 179	Planning Board	N/A	N/A	
6) Floodplain Management / Basin Plan	N							
7) Stormwater Management Plan/Ordinance	Y	12/19/05	N	Chapter 174	Borough	N/A	N/A	
8) Comprehensive Plan / Master Plan/ General Plan	Y				Administrator CFO			Not an Ordinance
9) Capital Improvements Plan	Y				CFO			Done in Budget
10) Site Plan Review Requirements	Y	4/16/79	N	Chapter 165	Borough	N/A	N/A	
11) Open Space Plan	Y	4/16/79	N	Chapter 179	Planning Board	N/A	N/A	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
12) Stream Corridor Management Plan	Y	12/19/05	N	Chapter 174	Borough	N/A	N/A	
13) Watershed Management or Protection Plan	N							
14) Economic Development Plan	Y	10/4/67	N	Chaptr 117-2	Borough	N/A	N/A	
15) Comprehensive Emergency Management Plan	N							
16) Emergency Response Plan	N							
17) Post Disaster Recovery Plan	N							
18) Post Disaster Recovery Ordinance	N							
19) Real Estate Disclosure Requirement	N							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.29.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Alaimo Associates Banisch Associates
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Alaimo Associates
3) Planners or engineers with an understanding of natural hazards	N	N/A
4) NFIP Floodplain Administrator	Y	Harry Wetterskog, Construction Official
5) Surveyor(s)	Y	Alaimo Associates
6) Personnel skilled or trained in GIS applications	Y	Alaimo Associates
7) Scientist familiar with natural hazards	N	N/A
8) Emergency Manager	Y	Chad Bozoski, OEM
9) Grant Writer(s)	N	N/A
10) Staff with expertise or training in benefit/cost analysis	N	N/A

9.29.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Not Known
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	Not Known
9) Withhold public expenditures in hazard-prone areas	Not Known
10) State mitigation grant programs	Not Known
11) Other	N/A

9.29.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	N/A	
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	
Public Protection	N/A	
Storm Ready	N/A	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Borough of Pemberton's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.29.6 MITIGATION STRATEGY

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

9.29.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section. Actions that are not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Mitigation for roads that provide key Emergency Services access				X		County owned bridge on Hanover Street in the Borough is being replaced and is currently under construction. This action should be considered complete.
Identify, document , and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood proof these properties				X		No public interest has been received regarding flooded properties

9.29.6.2 Hazard Vulnerabilities Identified

In the Borough of Pemberton, 0 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 12% is located within the 1% annual chance flood area. A total of 0% of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Borough of Pemberton has a total of 5 NFIP policies, 0 of which are located within the 1% annual chance flood area. FEMA has identified 2 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Pemberton (B)	5	1	\$459	2	0	0	0	5

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.29.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
PBB-1	Install new bulkhead and retaining wall next to fire house.	Yes	All	1-1 1-2 2-1 3-1 3-2	Borough of Pemberton /OEM/ Fire Dept	High	High	Municipal Budget, HMA programs with local or county match	Short Term DOF	High	SP
PBB-2	Install generators in the firehouse, public works yard, pump houses and water wells.	Yes	All	1-1 1-2 2-1 3-1 3-2	Borough of Pemberton OEM, DPW	High	High	Municipal Budget, HMA programs with local or county match	Short Term DOF	High	ES
PBB-3	Conduct Outreach/Education in storm and flood preparedness and notification procedures.	N/A	All	1-1 5-1	OEM	Medium	Low	Municipal Budget	Short Term	Medium	PE
PBB-4	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	5-1 5-3	Municipal Clerk, OEM and government	Medium	Low	Municipal Budget	Short Term	High	PE
PBB-5	Develop contingency plan for possible water tower failure and explore funding for upgrade	Existing	All Hazards	1-1 3-1	Municipal Clerk, OEM	High	Low-High	Federal Grants to include Homeland Security	Long Term	Medium	PR
PBB-6	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee, Planning, OEM, Floodplain Adm.	Medium	Low	Municipal Government, OEM and Floodplain Admin.	Short Term	Medium	PR

SECTION 9. 29: BOROUGH OF PEMBERTON

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
PBB-7	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
PBB-8	Improve municipal communication systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
PBB-9	Obtain and install backup power sources at all critical facilities to include shelters.	N/A	All Hazards	1-2 1-5 3-2	Municipality engineering, OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
PBB-10	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipal Government, OEM with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
PBB-11	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipal Government, OEM with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
PBB-12	Continue to promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipal Government with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	On-going	Medium	PR
PBB-13	Enhance community resilience to severe storms (incl. severe winter storms)	N/A	Severe Storm	1-1 1-5 3-1	OEM with support from County, NJOEM	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE

SECTION 9. 29: BOROUGH OF PEMBERTON

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
	by joining the NOAA "Storm Ready" program.				and FEMA						
PBB-14	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk, OEM and government	Medium	Low	Municipal Budget	Short Term	High	PR
PBB-15	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	N/A	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	Short Term	Medium	NR
PBB-16	Evaluate benefits of participating in the Firewise Program	Existing	Wildfire	1-1 1-5 2-1 3-1 4-1 5-1	Municipal OEM	Medium	Low	Municipal Government, OEM	Short Term	Medium	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

3. PE = Public Education and Awareness: 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.

4. NR = Natural Resource Protection: 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.

5. SP = Structural Projects: 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.

6. ES = Emergency Services: 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.

9.29.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
PBB-1	5	High	High	Yes	Yes	No	High
PBB-2	5	High	High	Yes	Yes	No	High
PBB-3	2	N/A	Low	Yes	Yes	Yes	Medium
PBB-4	2	Medium	Low	Yes	Yes	Yes	High
PBB-5	2	Medium	Low-High	Yes	Yes	No	Medium
PBB-6	7	Medium	Low	Yes	Yes	Yes	Medium
PBB-7	3	Medium	Medium	Yes	Yes	No	High
PBB-8	1	Medium	Medium	Yes	Yes	Yes	Medium
PBB-9	3	Medium	Medium	Yes	Yes	Yes	Medium
PBB-10	1	Medium	Low	Yes	Yes	Yes	High
PBB-11	1	High	Low – High	Yes	Yes	No	High
PBB-12	2	Medium	Medium	Yes	Yes	Yes	Medium
PBB-13	3	Medium	Low	Yes	Yes	Yes	Medium
PBB-14	3	Medium	Low	Yes	Yes	Yes	High
PBB-15	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
PBB-16	6	Medium	Low	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.29.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.29.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Borough of Pemberton has no additional risk vulnerabilities that need to be addressed at this time.

9.29.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Borough of Pemberton is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is 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 Pemberton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.29-1: Pemberton Borough Flood Exposure Map

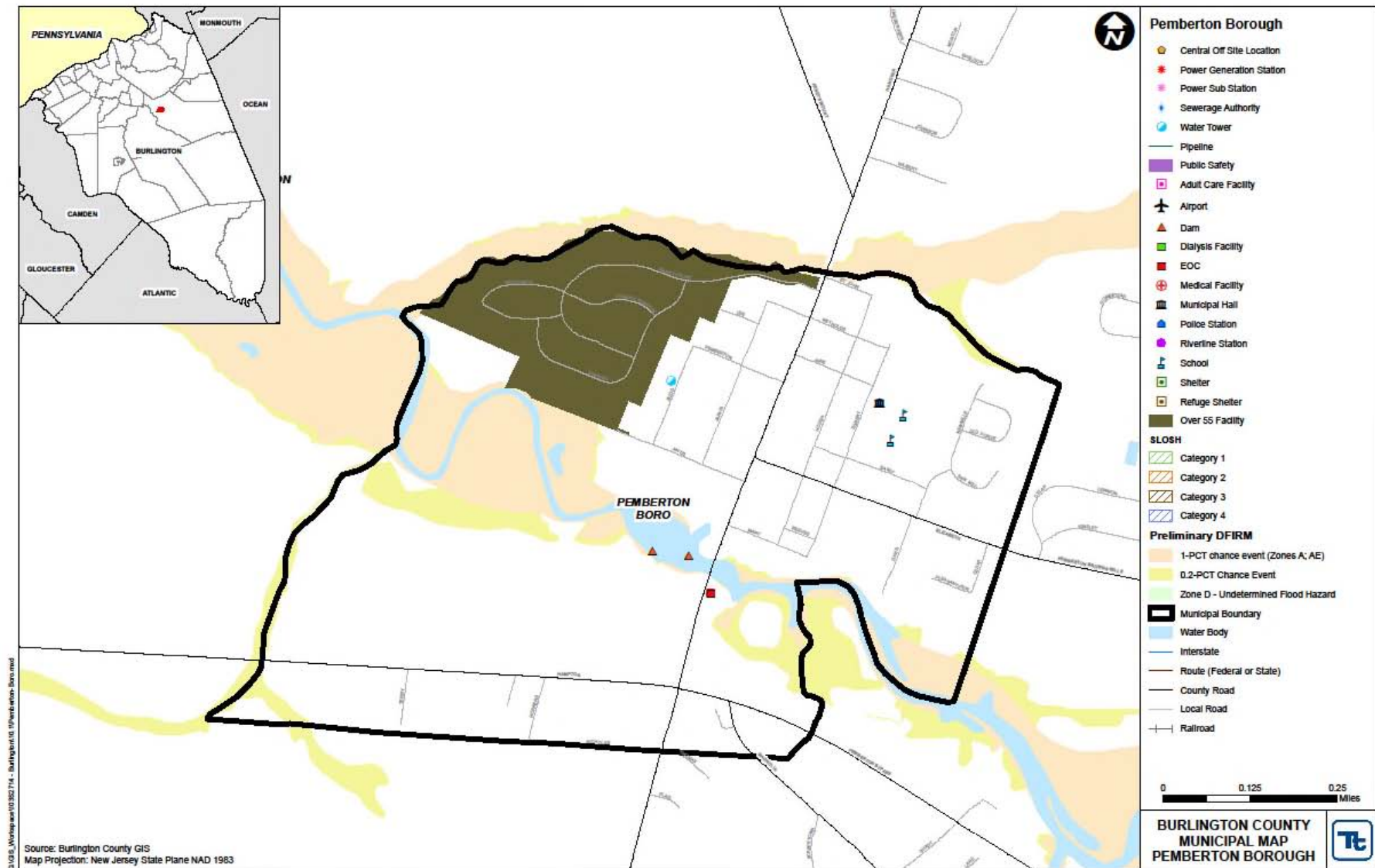
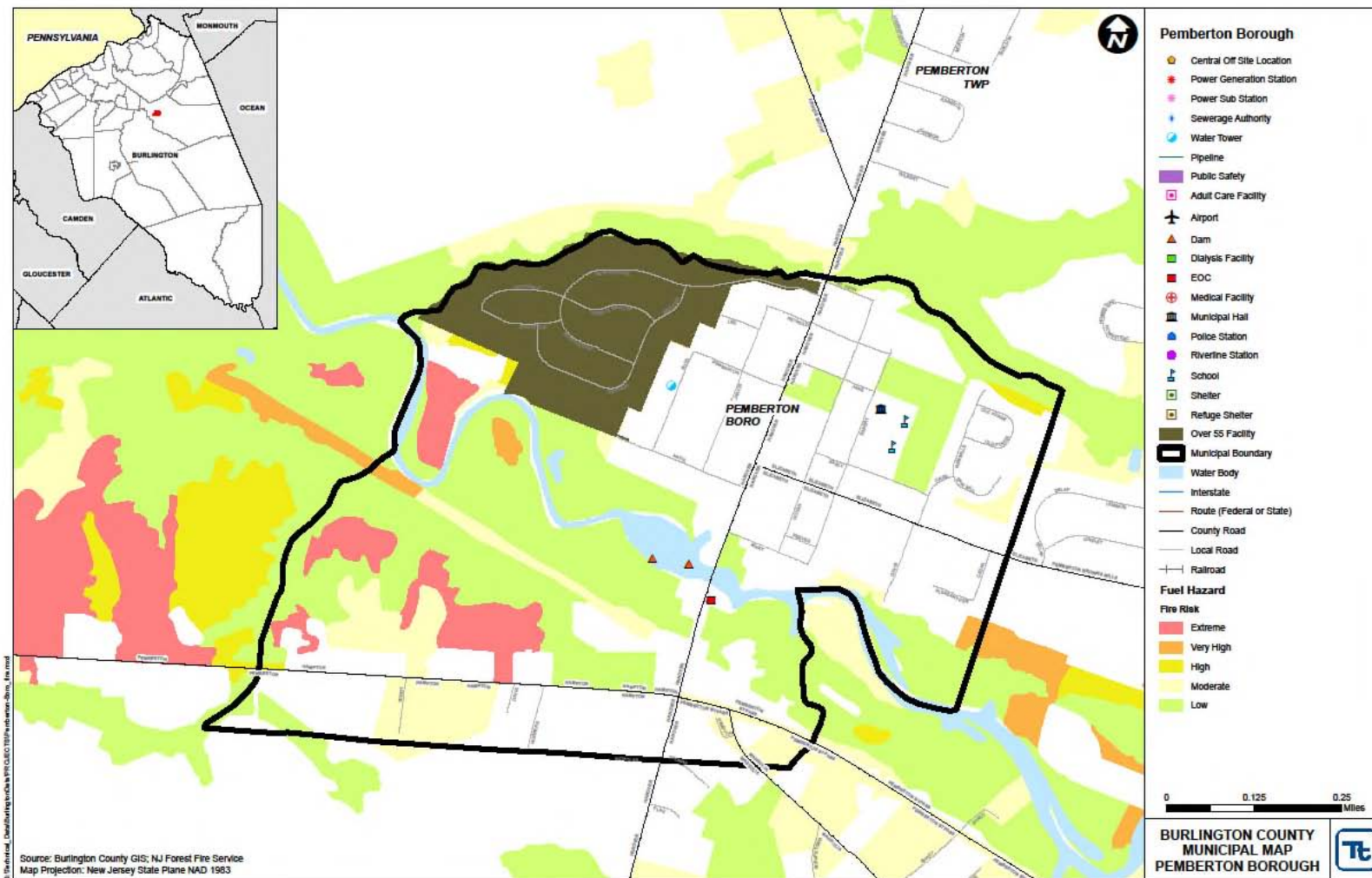


Figure 9.29-2: Pemberton Borough Wildfire Fuel Map



9.29.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of Borough of Pemberton to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.29.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.30 Township of Pemberton

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

9.30.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Chief Craig L. Augustoni Title: Emergency Management Coordinator/Fire Chief Address: 500 Pemberton-Brown Mills Rd., Pemberton, NJ 08068 Phone Number: (609) 894-3382 Fax Number: (609) 894-2703 E-mail Address: firechief@pemberton-twp.com	Name: Chief David Jantas Title: Deputy EMC/COP Address: 500 Pemberton-Brown Mills Rd., Pemberton, NJ 08068 Phone Number: (609) 894-3307 Fax Number: (609) 726-1188 E-mail Address: djantas@pembertonpolice.com

9.30.2 PROFILE

9.30.2.1 Population

The population of the Township of Pemberton is estimated to be 27,912, based on information gathered during the 2010 U.S. Census.

9.30.2.2 Location

Pemberton Township, with approximately 64 square miles, is one of the largest of Burlington County's 40 municipalities. There are a number of residential neighborhoods, including historic Browns Mills and New Lisbon, Birmingham, Country Lakes, and Presidential Lakes.

The Township is located on the eastern portion of Burling County. It completely surrounds the Borough of Pemberton and is bordered by Woodland to the south, New Hanover to the north-east, Springfield to the north, Eastampton to the north-west, and Southampton to the west and south-west. In addition, Pemberton Township borders the Ocean County municipalities of Manchester Township and Plumsted.

9.30.2.3 Brief History

Located adjacent to the New Jersey Pine Barrens, the Township developed as a mill town. During the mid-19th century, the Browns Mills section of the Township served as a luxury retreat for city dwellers who were attracted to the clean water of its streams, hailed for its medicinal purposes, and its healthy forest air. At this time, residents began growing cranberries, a crop which prospered in marshy land near the Township's creek and streams. Nineteenth century Township residents also took part in the production of charcoal, iron and glass. The agricultural future of the Township was changed in the early 20th century when Elizabeth C. White of Whitesbog began field experiments which led to the area's first cultivation of wild berries.

An almshouse and mental asylum were built at the turn of the century in the New Lisbon section of the Township. The state's first licensed sanatorium for treatment of tuberculosis was built in the Browns Mills area. The almshouse and mental asylum still operate today under the names of Buttonwood Hall and Evergreen Park; the sanatorium was sold to the Deborah Relief Society in 1922 and is now part of the Deborah Heart and Lung Center. After the expansion of Fort Dix during World War II, the Townships

character began to change from strictly rural to rural-suburban. Planned communities were built to accommodate the growing population, a few of the small communities of the 19th century disappeared or merged with newer developments, and the lines between individual communities blurred. The Township became incorporated by an act of New Jersey Legislature on March 10, 1846.¹

9.30.2.4 Governing Body Format

Pemberton Township is governed under the Mayor-Council form of government established under the Faulkner Act. Under this form, the mayor is the chief executive of the municipality and has the enforcement responsibility for all ordinances, charter provisions and prepares the budget of the municipality. The mayor, with the advice and consent of the council, appoints and removes department heads, including a business administrator. The mayor has the right to speak at council meeting but has no vote and does not need to attend.

The council is the legislative body of the municipality. The membership is five, seven or nine members, who are elected either at-large or from wards. The council is generally limited to legislative functions, but has investigative power and may remove municipal officers for cause. The council can reduce items in the mayor's budget by a majority vote, but it needs a two-thirds majority to increase any item in the budget.²

9.30.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.3.10) of this annex which illustrates the hazard areas along with the location of potential new development.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Danitom	Residential	53	Presidential Lakes	Various	None	Received approval in 2010 – pending construction

9.30.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

¹ <http://pemberton-twp.com/history>

² http://www.njslom.org/magart0307_p14.html

SECTION 9.30: TOWNSHIP OF PEMBERTON

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland and Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	The Township experiences numerous loss of services during this event. Loss of services included road closures, utility outages, and commercial closures. The Township experienced an estimated \$29K in losses incurred through emergency protective services, such as overtime, cleanup costs, and debris removal
Fire Management Assistance Declaration	FM-2695	Yes	May 15-29, 2007	None
Snowstorm	DR-1873	Yes	December 19-20, 2009	None
Snowstorm	DR-1889	Yes	February 5-6, 2010	The Township experiences numerous loss of services during this event. Loss of services included road closures, utility outages, and commercial closures. The Township experienced approximately \$53K in losses incurred through emergency protective services, such as overtime, cleanup costs, and debris removal.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	No Record
Severe Winter Storm and Snowstorm	DR-1954	Yes	December 26-27, 2010	The Township experiences minor loss of services during this event. Loss of services included road closures, utility outages, and commercial closures.
Tropical Storm/Hurricane Irene	DR-4021 / EM-3332	Yes	August 26 - September 5, 2011	The Township experiences numerous loss of services during this event. Loss of services included road closures, utility outages, and commercial closures. Evacuations were initiated for residences located on North Road and several water rescues were necessary in the Birmingham area. Roads and bridges suffered infrastructure damage and the Township experienced approximately \$42K in losses incurred through emergency protective services, such as overtime, cleanup costs, and debris removal.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	The Township experiences numerous loss of services during this event. Loss of services included road closures, utility outages, and commercial closures. Utility outages lasted for several days. The Bayberry dam experienced infrastructure damage, and recreational facilities received damage as well.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.



9.30.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Pemberton.

Natural 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
Flood	1% Annual Chance: \$49,124,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$3,503,278 500-Year MRP: \$32,300,687 Annualized Loss: \$469,439	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$19,708,890 5% of GBS: \$98,544,450	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$1,731,151,000	Frequent	33	High
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$1,123,478 2,500-Year MRP: \$26,014,189 Annualized Loss: \$23,092	Rare	6	Medium
Landslides	Not available	Rare	6	Low

Notes

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.30.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Pemberton indicated that the municipality has high planning, regulatory, administrative, technical, community resiliency and community political capability, and a limited fiscal capability; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.30.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Pemberton.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	6/77		Chapter 86 Township Code	Community Development	+	+	
2) Zoning Ordinance	X	12/73		Chapter 190 Township Code	Community Development	+	+	
3) Subdivision Ordinance	X	Unknown		Chapter 159 Township Code	Community Development	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	3/87		Chapter 110 Township Code	Community Development	+	+	
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	X	3/87		Chapter 110 Township Code	Community Development	+	+	
7) Stormwater Management Plan/Ordinance	X	6/83		Chapter 159	Administration	+	+	Also located in Chapter located in 190-50.9/190.10
8) Comprehensive Plan / Master Plan/ General Plan	X	7/09		N/A	Administration	+	+	

SECTION 9.30: TOWNSHIP OF PEMBERTON

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
9) Capital Improvements Plan	X	3/13		N/A	Administration	+	+	Updated annually
10) Site Plan Review Requirements	X	1/77		Chapter 190 Section 190-45	Community Development	+	+	
11) Open Space Plan	X	7/09		N/A	Administration	+	+	
12) Stream Corridor Management Plan	N/A					+	+	
13) Watershed Management or Protection Plan	X	8/82		Chapter 190 190-50	Community Development	+	+	
14) Economic Development Plan	X	7/09			Administration	+	+	
15) Comprehensive Emergency Management Plan	X	9/11			PTOEM	+	+	
16) Emergency Response Plan	X	9/11			PTOEM	+	+	
17) Post Disaster Recovery Plan	X	9/11			PTOEM	+	+	
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								
Redevelopment	X	3/95		Chapter 45	Administration	0	+	

9.30.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Planning
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Engineering
3) Planners or engineers with an understanding of natural hazards	Y	Planning/Engineering
4) NFIP Floodplain Administrator	Y	Director of Community Development
5) Surveyor(s)	Y	Engineering
6) Personnel skilled or trained in GIS applications	Y	Engineering
7) Scientist familiar with natural hazards	Y	Engineering
8) Emergency Manager	Y	OEM
9) Grant Writer(s)	Y	Engineering
10) Staff with expertise or training in benefit/cost analysis	Y	Engineering/Planning

9.30.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	Yes
10) State mitigation grant programs	Yes
11) Other	

9.30.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	-
Building Code Effectiveness Grading Schedule (BCEGS)	NP	-
Public Protection	NP	-
Storm Ready	NP	-
Firewise	NP	-

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Pemberton's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.30.6 MITIGATION STRATEGY

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

9.30.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Repair sidewalk area on Bayberry Dam		X				The project is currently underway and is expected to be completed early 2014
Repair dams including gates at Presidential Lake				X		This project was completed by the township.
Repair Dam and Dam #3 on Choctaw Drive in Country Lakes		X				The project is in progress and is due to begin in 2014. Township Engineer (ARH) is coordinating.
Repair Dam #2 and retaining wall at Split Rock Road in Country Lakes		X				The project is in progress and is due to begin in 2014. Township Engineer (ARH) is coordinating.
Make improvements to roadway off Mirror Lake and Birmingham Road	X					Due to budget and personnel restraints, the Township is not able to make roadway improvements to mitigate flooding in this area.

9.30.6.2 Hazard Vulnerabilities Identified

The Township identified issues with the Bayberry and Hanover Dams.

In the Township of Pemberton, estimated 1,734 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 26% is located within the 1% annual chance flood area. A total of \$289,072,000 (8.9%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Pemberton has a total of 237 NFIP policies, 92 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Pemberton (T)	237	64	\$825,155	0	0	92	96	141

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States
NA = Not available
T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.30.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
PT-1	Upgrade sidewalk area on Bayberry Dam	Existing	Flood	1-1 3-1	Lead: Pemberton Twp. Support:	Medium	High (~\$450K)	FEMA HMGP and local budget	Long	Medium	PP
PT-2	Upgrade Dam and Dam #3 on Choctaw Drive in Country Lakes	Existing	Flood	3-1 4-2	Lead: Pemberton Twp. Support:	High	High (~\$1M)	FEMA HMGP and local budget	Long	High	SP
PT-3	Upgrade Dam #2 and retaining wall at Split Rock Road in Country Lakes	Existing	Flood	3-1 4-2	Lead: Pemberton Twp. Support:	High	High (~\$500K)	FEMA HMGP and local budget	Long	High	SP
PT-4	Bayberry Street Dam, Browns Mill – Construct overtopping protection	Existing	Flood	3-1 4-2	Lead: Twp. OEM Support: Administration, Twp. DPW, Twp. Engineer	High	High (~\$1M)	FEMA funding with municipal cost share	Short	High	SP
PT-5	Wissahickon Road and Split Rock Road, Country Lakes – remove existing spillway structure and install an ogee with new wing walls to regulate the flow to the downstream stream, install overtopping protection along both the upstream and downstream embankments and stabilize the vegetative area surrounding the existing dam.	Existing	Flood	3-1 4-2	Lead: Twp. OEM Support: Administration, Twp. DPW, Twp. Engineer	High	High	Grant funding with municipal cost share	Short	High	SP
PT-6	Choctaw Drive, Country Lakes – Remove the existing spillway structure and install box spillway along with new wing walls to regulate the flow to the downstream lake, install	Existing	Flood	3-1 4-2	Lead: Twp. OEM Support: Administration, Twp. DPW, Twp. Engineer	High	High	Grant funding with municipal cost share	Short	High	SP

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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
	overtopping protection along both the upstream and downstream embankments and complete roadway improvements.										
PT-7	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee, Planning, OEM, Floodplain Adm.	Medium	Low	Municipal Government, OEM and Floodplain Admin.	Short Term	Medium	PR
PT-8	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
PT-9	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
PT-10	Obtain and install backup power sources at all critical facilities to include shelters.	N/A	All Hazards	1-2 1-5 3-2	Municipality engineering, OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
PT-11	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipal Government, OEM with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
PT-12	Continue to support the implementation, monitoring, maintenance, and updating	New and Existing	All Hazards	1-4	Municipal Government, OEM with	High	Low – High (for 5 year update)	Municipal Budget, FEMA	On-going	High	PR

SECTION 9.30: TOWNSHIP OF PEMBERTON

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
	of this Plan through participating in the 5 year Plan Update				support from Planning Partners, County Planning, NJOEM, FEMA			planning grants			
PT-13	Continue to promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipal Government with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	On-going	Medium	PR
PT-14	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	OEM with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
PT-15	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk, OEM and government	Medium	Low	Municipal Budget	Short Term	High	PR
PT-16	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	N/A	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	Short Term	Medium	PR
PT-17	Evaluate benefits of participating in the Firewise Program	Existing	Wildfire	1-1 1-5 2-1 3-1 4-1 5-1	Municipal OEM	Medium	Low	Municipal Government, OEM	Short Term	Medium	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program



NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.30.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
PT-1	2	Medium	High	No	Yes	No	Medium
PT-2	2	High	High	Yes	Yes	No	High
PT-3	2	High	High	Yes	Yes	No	High
PT-4	2	High	High	Yes	Yes	No	High
PT-5	2	High	High	Yes	Yes	No	High
PT-6	2	High	High	Yes	Yes	No	High
PT-7	7	Medium	Low	Yes	Yes	Yes	Medium
PT-8	3	Medium	Medium	Yes	Yes	No	High
PT-9	1	Medium	Medium	Yes	Yes	Yes	Medium
PT-10	3	Medium	Medium	Yes	Yes	Yes	Medium
PT-11	1	Medium	Low	Yes	Yes	Yes	High
PT-12	1	High	Low – High	Yes	Yes	No	High
PT-13	2	Medium	Medium	Yes	Yes	Yes	Medium
PT-14	3	Medium	Low	Yes	Yes	Yes	Medium
PT-15	3	Medium	Low	Yes	Yes	Yes	High
PT-16	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
PT-17	6	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.30.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.2.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Pemberton has no additional risk vulnerabilities that need to be addressed at this time.

9.2.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Pemberton is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Pemberton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.30-1: Pemberton Township Flood Exposure Map

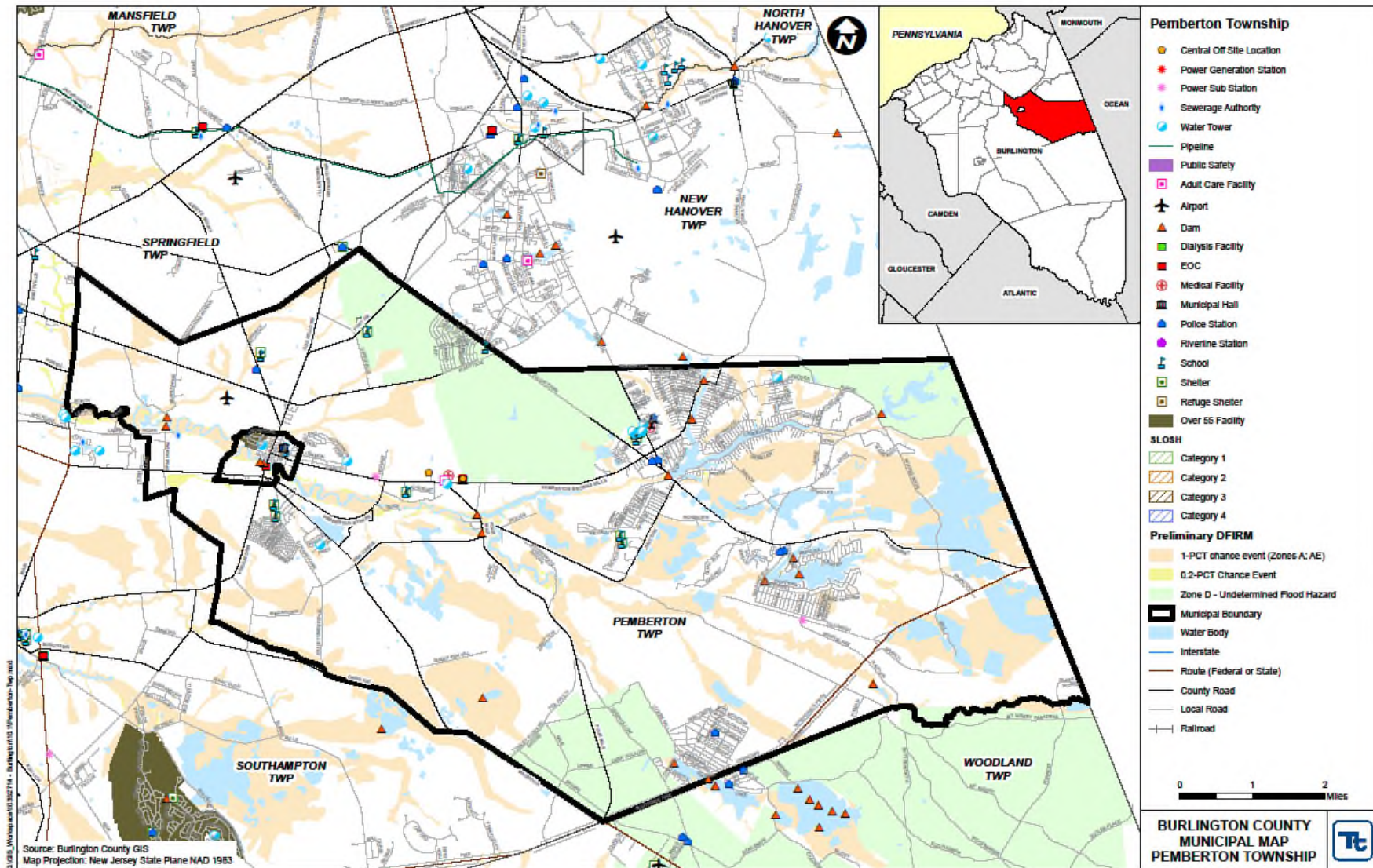
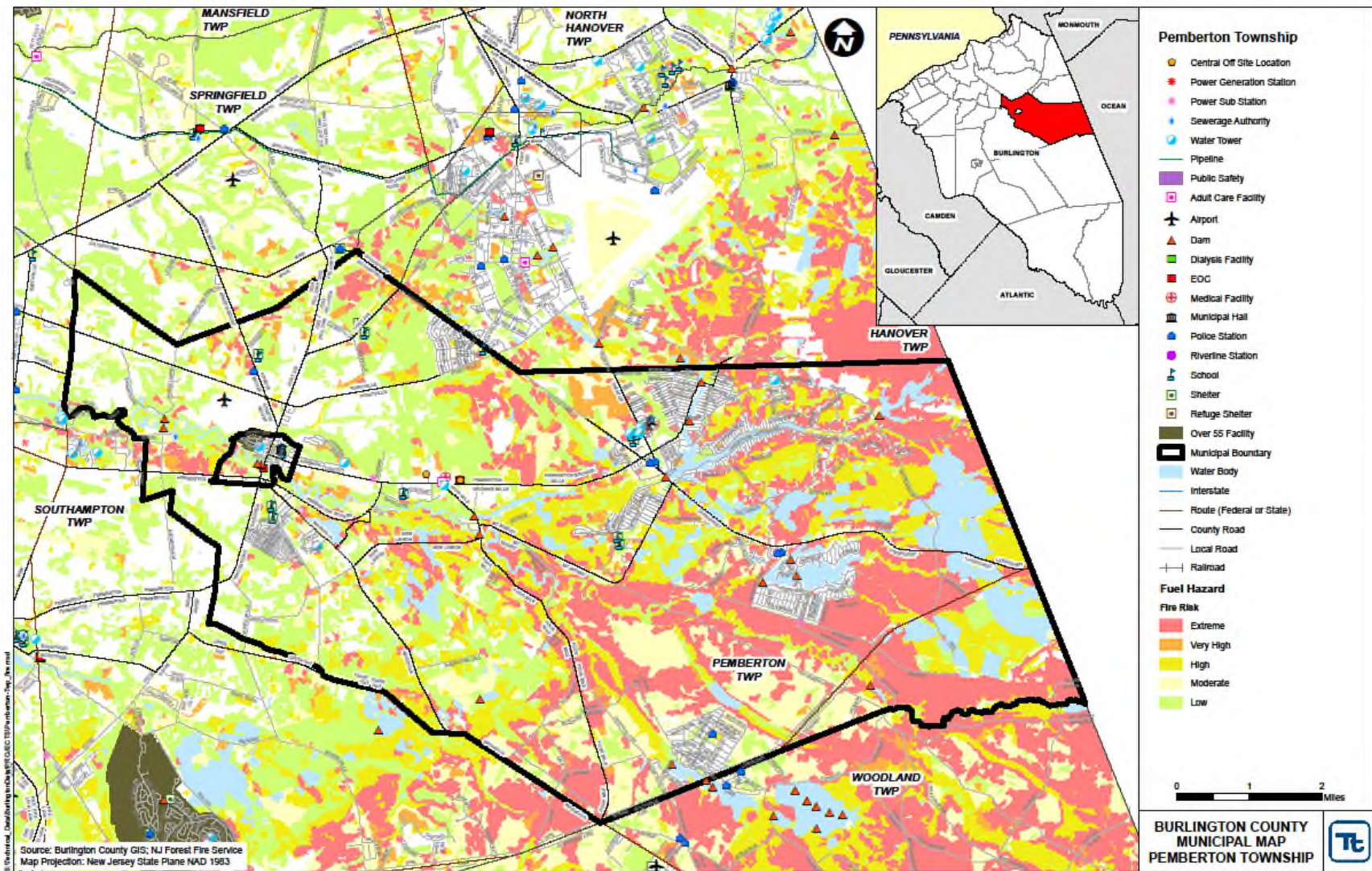


Figure 9.30-2: Pemberton Township Wildfire Fuel Map



9.30.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of Township of Pemberton to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.30.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.31 Township of Riverside

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

9.31.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Meghan Jack Title: Administrator Address: 237 South Pavilion Avenue Phone Number: (856) 461-1460 Ext. 4 Fax Number: 856-461-3260 E-mail Address: meghanjack@comcast.net	Name: Steve Barone Title: OEM Coordinator Address: 237 South Pavilion Avenue Phone Number: (856) 764-5880 Fax Number: E-mail Address: sbarone429@comcast.net

9.31.2 PROFILE

9.31.2.1 Population

The population of the Township of Riverside is estimated to be 8,079, based on information gathered during the 2010 U.S. Census.

9.31.2.2 Location

The Township of Riverside is located in the north-west portion of Burlington County along the Delaware River. The Township is bordered by the Rancocas River and Delanco to the east and Delran to the west and south. To the north across the Delaware River, Riverside Township is bordered by Philadelphia, Pennsylvania. The Township encompasses one square mile.

9.31.2.3 Brief History

Riverside, New Jersey has a rich and interesting history. Samuel Bechtold founded Riverside, first called "Progress," in 1851 as a resort town. People came here to enjoy our forests, meadows, streams and ponds. In the summertime, Philadelphia became quite oppressive. So, it was a breath of fresh air to vacation in Riverside's country atmosphere.

Riverside once housed the world's largest watch case manufacturer, doing business around the globe from the Philadelphia Watch Case Company Building. It was in an era when everyone carried a pocket watch. The building's clock tower has become a Riverside landmark. The Township of Riverside was incorporated on February 20, 1985.¹

9.31.2.4 Governing Body Format

Riverside Township is governed under the Township form of government with a five-member Township Committee. The Township Committee is elected directly by the voters in partisan elections to serve three-year terms of office on a staggered basis, with one or two seats coming

¹ <http://www.riversidetwp.org/groups%20&%20organizationsl.html>

up for election each year. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

Under the Township form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint, including the township form, may appoint a municipal administration and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.31.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.3.10) of this annex which illustrates the hazard areas along with the location of potential new development.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Golden Triangle	Residential	300+/-	N. Pavilion Avenue	602 1, 2, 2,01	Metals (Remediated)	Preliminary Approvals
Taubel's Mill	Residential	188	S. Fairview Street	1201, 1	None Known	Final Approvals
Zurbrugg Hospital	Residential & Commercial	400+/-	Zurbrugg Way	3204, 1	Asbestos (Remediated)	Preliminary Approvals

² http://www.njslom.org/magart0307_p14.html

9.31.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland and Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None Known
Fire Management Assistance Declaration	FM-2695	Yes	May 15-29, 2007	None Known
Snowstorm	DR-1873	Yes	December 19-20, 2009	Damage to roadways and trees due to storm. Damage was approximately \$20,000.00.
Snowstorm	DR-1889	Yes	February 5-6, 2010	Damage to roadways and trees due to storm. Damage was approximately \$20,000.00.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Damage to roadways and trees due to storm. Damage was approximately \$15,000.00.
Severe Winter Storm and Snowstorm	DR-1954	Yes	December 26-27, 2010	Damage to roadways and trees due to storm. Damage was approximately \$20,000.00.
Tropical Storm/Hurricane Irene	DR-4021 / EM-3332	Yes	August 26 - September 5, 2011	Damage to roadways, trees and buildings due to storm. Damage was approximately \$53,000.00.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Damage to roadways, trees and buildings due to storm. Damage was approximately \$50,000.00.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.31.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Riverside.

Natural 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
Flood	1% Annual Chance: \$12,766,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,256,716 500-Year MRP: \$4,616,209 Annualized Loss: \$64,698	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$5,339,160 5% of GBS: \$26,695,800	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$78,096,000	Frequent	18	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$324,073 2,500-Year MRP: \$7,818,567 Annualized Loss: \$7,038	Rare	6	Medium
Landslides	Not available	Occasional	36	High

Notes:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.31.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Riverside indicated that the municipality has moderate planning, regulatory, administrative, technical, community resiliency and community political capability, and a limited fiscal capability; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.31.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Riverside.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	1/1/2009		UCC	State			
2) Zoning Ordinance	X	7/18/2005		Chapter 255	Township			
3) Subdivision Ordinance	X	7/18/2005		Chapter 255 Pg 76	Township			
4) NFIP Flood Damage Prevention Ordinance	N/A							
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	4/27/2005		Chapter 227	Township			
8) Comprehensive Plan / Master Plan/ General Plan	X	7/16/2013		Chapter 255, Pgs 29-31	Township			
9) Capital Improvements Plan	N/A							
10) Site Plan Review Requirements	X	7/18/2005		Chapter 255, Pg 76	Township			
11) Open Space Plan	N/A							
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X				County			
16) Emergency Response Plan	N/A							
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.31.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Twp Planner/Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Twp Engineer/Construction Official
3) Planners or engineers with an understanding of natural hazards	Y	Twp Planner/Engineer
4) NFIP Floodplain Administrator	Y	Twp Administrator
5) Surveyor(s)	Y	Twp Engineer
6) Personnel skilled or trained in GIS applications	Y	Twp Engineer
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	OEM Coordinator
9) Grant Writer(s)	Y	Twp Administrator
10) Staff with expertise or training in benefit/cost analysis	Y	Twp Engineer & Administrator

9.31.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Y
2) Capital Improvements Project Funding	Y
3) Authority to levy taxes for specific purposes	Y
4) User fees for water, sewer, gas or electric service	Y
5) Impact fees for homebuyers or developers of new development/homes	N
6) Incur debt through general obligation bonds	Y
7) Incur debt through special tax bonds	Y
8) Incur debt through private activity bonds	N
9) Withhold public expenditures in hazard-prone areas	Y
10) State mitigation grant programs	Y
11) Other	N

9.31.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Riverside's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.31.6 MITIGATION STRATEGY

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

9.31.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

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Existing Mitigation Action	Status					Action Update
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood proof these properties			X			The Township continues to compile its list of flood prone properties. In addition, funding has been sought for the acquisition and elevation of two properties.
Mitigation for clearing roads blocked by fallen trees				X		All debris has been removed from the roadways at this time.

9.31.6.2 Hazard Vulnerabilities Identified

In the Township of Riverside, estimated 271 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 29% is located within the 1% annual chance flood area. A total of \$69,606,000 (7.9%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Riverside has a total of 88 NFIP policies, 36 of which are located within the 1% annual chance flood area. FEMA has identified 3 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Riverside (T)	88	31	\$124,837	3	0	36	79	9

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Map

HAZUS = Hazards United States

NA = Not available
T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.31.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
RS-1	Incorporate ordinances and/or zoning restrictions to control and mitigate future development in hazard areas.	N/A	All Hazards	1-1 1-4	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
RS-2	Improve municipal communication systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR
RS-3	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	HMA Grants Municipal Budget	Short	Medium	ES
RS-4	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
RS-5	Purchase, relocate, or elevate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss property as priority. Phase 1: Identify appropriate candidates based on cost-effectiveness, for example: 119 Polk Street and 138 Polk Street have been identified for elevation and	Existing	Flood, Severe Storm	1-1 2-1 2-2	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from County Planning, NJOEM, FEMA	High	High	FEMA Mitigation Grants	Long Term DOF	Medium	PP

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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
	acquisition respectively. Phase 2: Where determined to be a viable option, work with property owners toward implementation of the determined action based on available funding from FEMA and local match availability										
RS-6	Perform base repairs on Greenwood Avenue, Hooker Street, Grant Street, Arndt Avenue and Delaware Avenue, which have been eroded due to repetitive flooding.	N/A	Flood, Severe Storm	1-1	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NJOEM, FEMA	High	Low-Medium	Federal Grants and Municipal Budget	On-going	High	PR, PE
RS-7	Obtain and archive elevation certificates	N/A	Flood, Severe Storm	1-1 1-3	NFIP Floodplain Administrator	Medium	Low	Municipal Budget	On-going	High	PR
RS-8	Promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
RS-9	Establish an alternate emergency operations center within the Municipal Building.	N/A	Severe Storm	1-1 1-2 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget Federal Grants	Short Term DOF	Medium	PE
RS-10	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short	High	PR
RS-11	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption.	N/A	Severe Storm	1-5 4-1	Municipal Code Enforcement	Medium	Low	Municipal Budget	Short	High	PR
RS-12	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2	Twp. Committee, Planning, OEM, Floodplain Adm.	Medium	Low	Municipal Government, OEM and Floodplain	Short Term	Medium	PR

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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
				3-1 4-1 5-1				Admin.			
RS-13	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
RS-14	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
RS-15	Enhance community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.

5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.31.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
RS-1	2	Medium	Medium	Yes	Yes	No	Medium
RS-2	1	Medium	Medium	Yes	No	Yes	Medium
RS-3	3	Medium	Medium	Yes	Yes	No	Medium
RS-4	1	Medium	Low	Yes	No	Yes	High
RS-5	3	High	High	Yes	Yes	No	Medium
RS-6	1	High	Low-Medium	Yes	Yes	Yes	High
RS-7	2	Medium	Low	Yes	No	Yes	High
RS-8	2	Medium	Medium	Yes	Yes	Yes	Medium
RS-9	3	Medium	Low	Yes	Yes	Yes	Medium
RS-10	3	Medium	Low	Yes	Yes	Yes	High
RS-11	2	Medium	Low	Yes	Yes	Yes	High
RS-12	7	Medium	Low	Yes	Yes	Yes	Medium
RS-13	3	Medium	Medium	Yes	Yes	No	High
RS-14	1	High	Low – High	Yes	Yes	No	High
RS-15	3	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.31.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.2.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Riverside has no additional risk vulnerabilities that need to be addressed at this time.

9.2.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Riverside is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Riverside has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.31-1: Riverside Flood Exposure Map

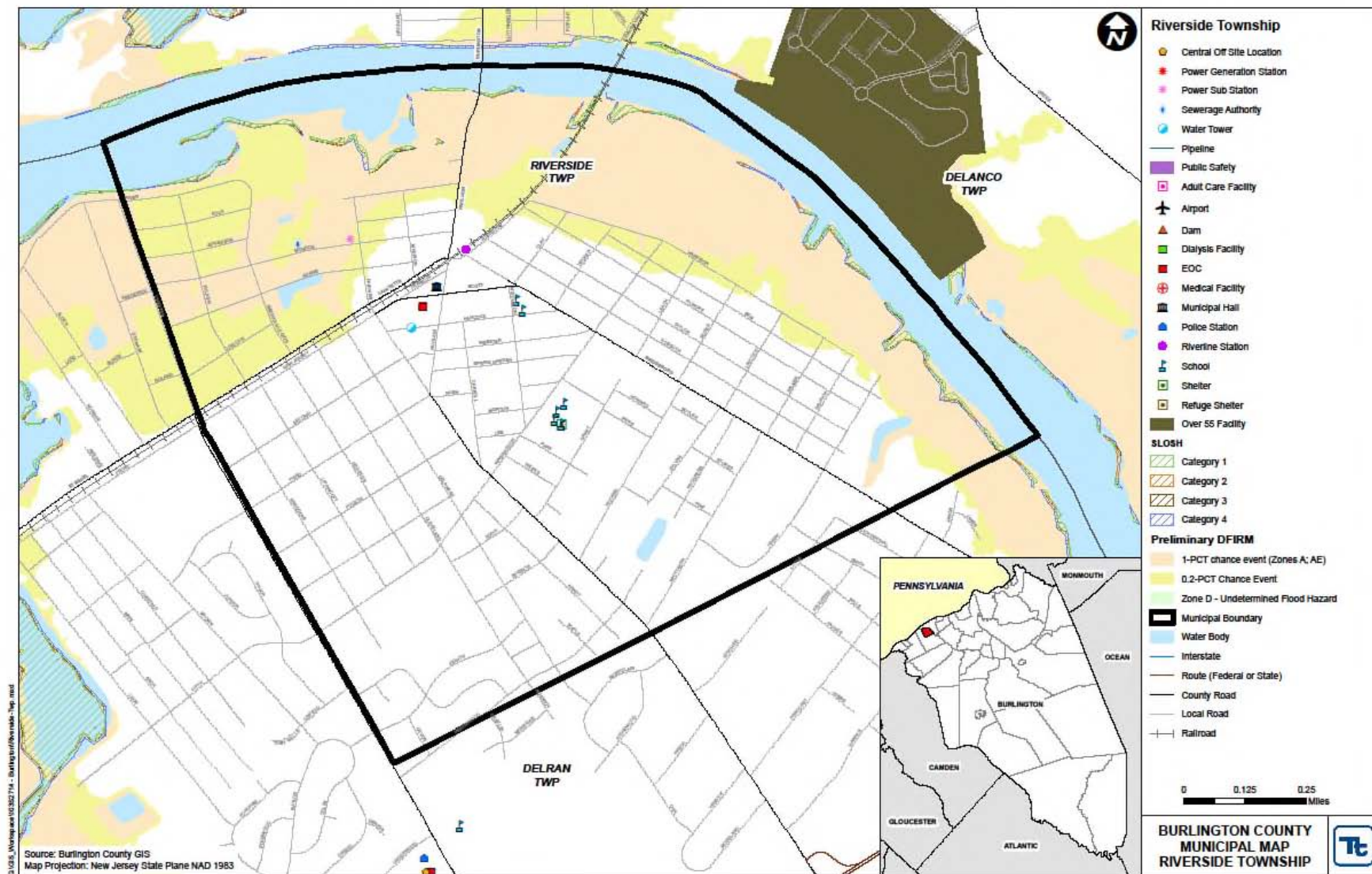
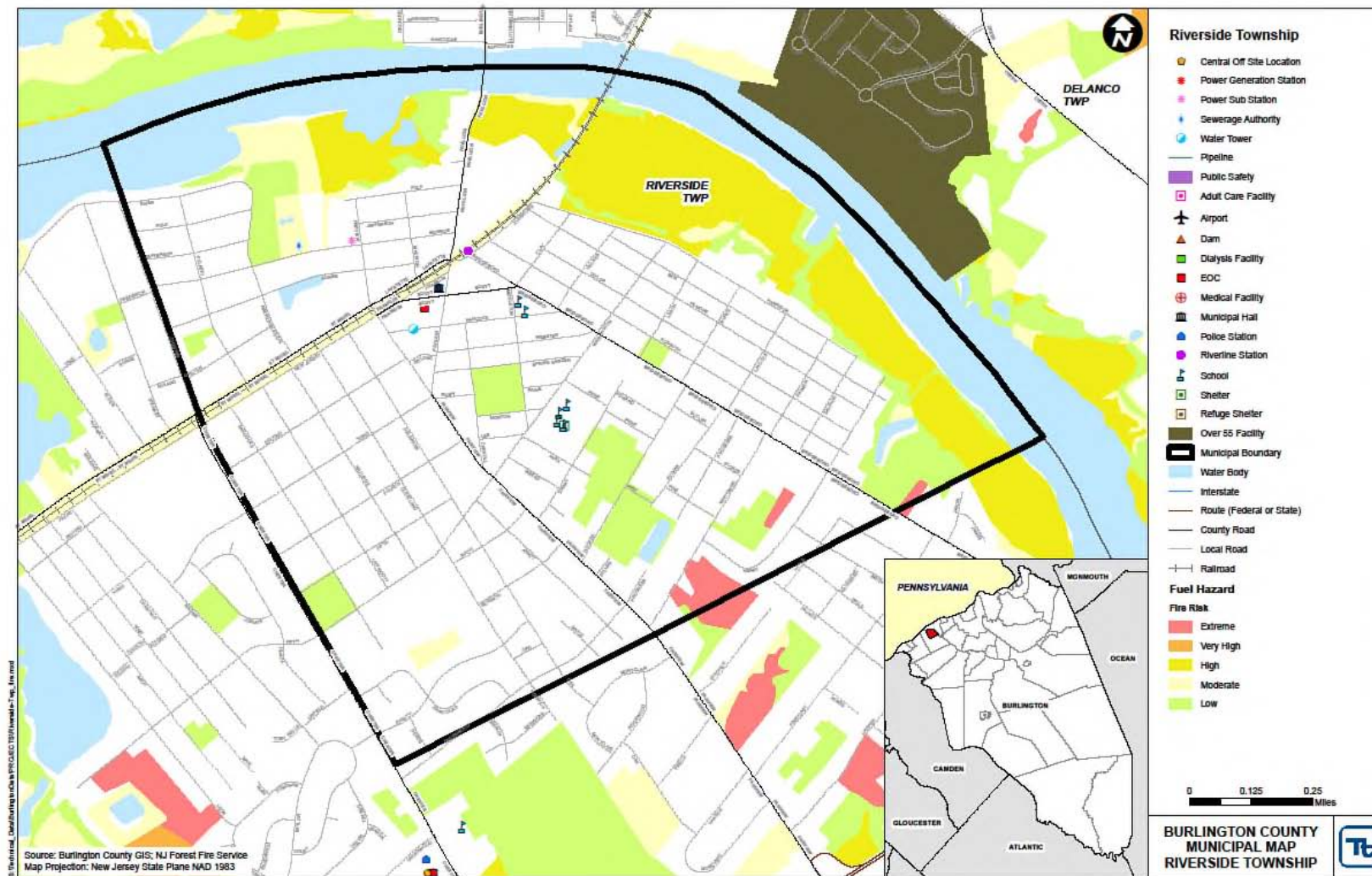


Figure 9.31-2: Riverside Wildfire Fuel Map



9.31.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of Township of Riverside to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	X

9.31.12 ADDITIONAL COMMENTS

There are no additional comments at this time.



9.32 Borough of Riverton

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

9.32.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Scott Reed Department of Emergency Management Address: 505-A Howard Street, Riverton, N.J. 08077 Phone Number: 856-829-0120 Fax Number: 856-829-1430 E-mail Address: Scottreed@comcast.net	Name: Betty Boyle Department of Emergency Management Address: 505-A Howard Street, Riverton, N.J. 08077 Phone Number: 856-829-0120 Fax Number: 856-829-1430 E-mail Address: bboyle@riverton-nj.com

9.32.2 PROFILE

9.32.2.1 Population

The population of the Borough of Riverton is estimated to be 2,779, based on information gathered during the 2010 U.S. Census.

9.32.2.2 Location

The Borough of Riverton is located on the northwestern tip of Burlington County along the Delaware River. The Borough is bordered by Cinnaminson to the east and south, and Palmyra to the west. To the north across the Delaware River, Riverton Borough is bordered by Philadelphia, Pennsylvania. The Borough encompasses just under one square mile.

9.32.2.3 Brief History

The Borough of Riverton was founded in 1851 by a group of ten Philadelphians for summer homes for their families. They wanted a site offering country living with easy access to Philadelphia. Riverton offered both. Noted architect Samuel Sloan was commissioned by the group to design a village, to be named Riverton, on 120 acres of land to be purchased from Joseph Lippincott in the old township of Chester. The tract lay between the Delaware river and the Camden & Amboy railroad. According to architectural historian Henry Russell Hitchcock, Riverton was the first totally planned residential subdivision in America.

Within five months of its purchase in January 1851, the riverfront was developed as planned and the founders sought incorporation as The Riverton Improvement Company. For twenty years, beginning in March 1852, the Corporation held the right to issue deeds for the village and add to the original acreage which would also become a part of Riverton.

Riverton transitioned from a summer resort to a permanent community. As this transition occurred, a movement grew for independence from its parent township of Cinnaminson. In 1865 Cinnaminson had separated from Chester township and taken Riverton and several other small villages with it. In December 1893 a special election was held and the decision to become a borough was unanimous. Edward H. Ogden became Riverton's first mayor and a four-man borough council was elected and installed on January 1, 1894. At their first meeting boundaries of the borough were established for the first time. The Council

meetings were held at the fire house. This custom continued until 1989 when a new Municipal building was erected.¹

9.32.2.4 Governing Body Format

Riverton is governed under the Borough form of New Jersey municipal government. The government consists of a mayor and a borough council made up of six council members, with all positions elected at large in partisan elections. A mayor is elected directly by the voters to a four-year term of office. The borough council consists of six members elected to serve three-year terms on a staggered basis, with two seats coming up for election each year.

Under the Borough form, the mayor retains all general law authority, presides over council meetings and can vote in the case of a tie. The mayor appoints, with the advice and consent of council, all subordinate officers of the municipality. The council is the legislative body of the Borough. All executive responsibilities not placed in the office of the Mayor by general law or the Borough law remain with the council.²

9.32.2.5 Growth/Development Trends

The Borough of Riverton did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
N/A	N/A	N/A	N/A	N/A	N/A	N/A

9.32.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms	DR-1694	Yes	April 14-20,	None

¹ <http://www.riverton-nj.com/historic.html>

² http://www.njslom.org/magart0307_p14.html

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
and Inland/Coastal Flooding (also identified as a Nor'Easter)			2007	
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	None
Winter Storm	DR-1889	Yes	February 5-6, 2010	Record snowfall disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	This severe winter storm event disrupted transportation and public safety systems. Roads were closed or severely compromised creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Hurricane force winds severely damaged trees throughout the Borough. Roads were severely compromised with flooding and debris an threatened public health and safety by limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	This event produced hurricane force winds and rain which caused downed trees, utility lines, power outages and related damage throughout the Borough.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.32.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Borough of Riverton.

Natural 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
Flood	1% Annual Chance: \$3,115,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$612,407 500-Year MRP: \$2,094,136 Annualized Loss: \$29,162	Frequent	48	High
Severe Winter Storm	1% of GBS: \$2,212,690 5% of GBS: \$11,063,450	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$28,004,000	Frequent	18	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$133,131 2,500-Year MRP: \$3,138,205 Annualized Loss: \$2,842	Rare	6	Medium
Landslides	Not available	Occasional	36	High

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.32.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Borough of Riverton indicated that the municipality has moderate planning, regulatory, administrative, technical, community resiliency and community political capability, and a moderate fiscal capability; and a moderate political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.32.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Riverton.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./ Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	Adopted 1975 Updated 1992	-	Borough Code Chapter 109	Construction Department	+	+	
2) Zoning Ordinance	X	Updated 2013	-	Borough Code 128	Zoning Department	+	+	
3) Subdivision Ordinance	X	Adopted with original zoning document		Included within the Zoning Ordinance	Zoning/Planning board	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	Updated 2010	-		Construction Department	+	+	Updated to include requirements by CRS review
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	x	Updated 2009		Borough code 71	Construction Department	+	+	
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	X	Updated 2010	-		Construction Department	+	+	
7) Stormwater Management Plan/Ordinance	X	Updated 2010	-		DPW			

SECTION 9. 32: BOROUGH OF RIVERTON

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./ Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
8) Comprehensive Plan / Master Plan/ General Plan	X	Updated 2009	-		Planning	+	+	
9) Capital Improvements Plan	X	Updated 2013	-		Finance			
10) Site Plan Review Requirements	X	Updated 2010	-	Chapter 109	Planning board	+	+	
11) Open Space Plan	X	Updated 2009			Planning board	+	+	
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	X	Updated 2009		Chapter 71	Borough Council			
14) Economic Development Plan	X	Updated 2009						
15) Comprehensive Emergency Management Plan	X	Updated 2008			OEM	+	+	
16) Emergency Response Plan								
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A							

9.32.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Zoning/planning Board
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Borough Council
3) Planners or engineers with an understanding of natural hazards	Y	Borough Council
4) NFIP Floodplain Administrator	Y	Superintendent DPW
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Mayor
9) Grant Writer(s)	Y	Borough Council
10) Staff with expertise or training in benefit/cost analysis	Y	Borough Council

9.32.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	Don't Know
9) Withhold public expenditures in hazard-prone areas	Don't Know
10) State mitigation grant programs	Yes
11) Other	

9.32.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Borough of Riverton's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.32.6 MITIGATION STRATEGY

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

9.32.6.1 Past Mitigation Actions/Status

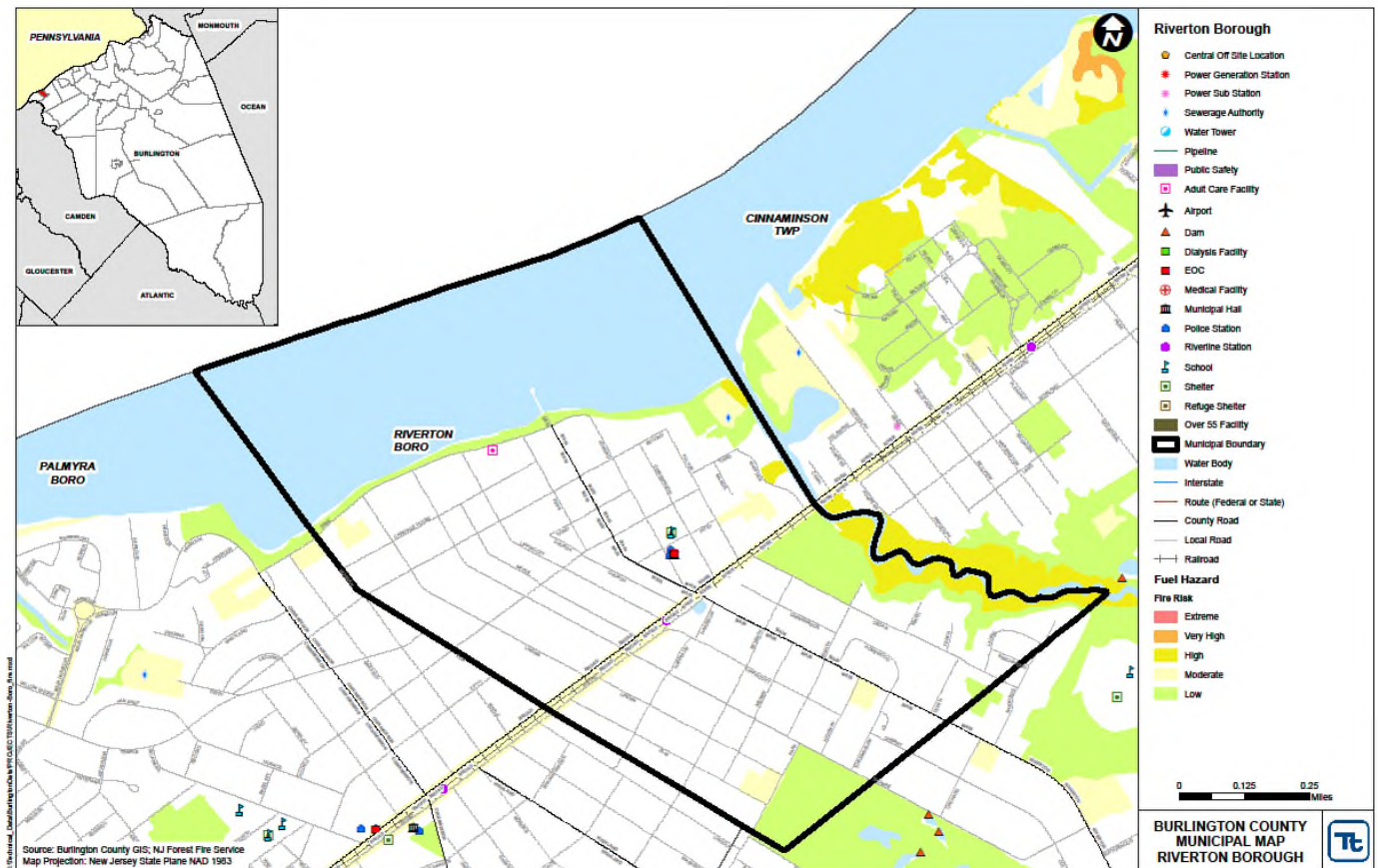
No Action Items for Riverton Borough exist, as the Borough did not take part in the 2008 effort.

9.32.6.2 Hazard Vulnerabilities Identified

The Borough is prone to winter storms with snow, ice & high winds. The Borough is also prone to thunder storms, wind storms, tropical storms and hurricanes.

Though wildfire is not the most immediate threat to the Borough, fire hazard is high in a portion of the area, as illustrated in the figure below and at the end of this annex.

Figure 9.32-1: Riverton Wildfire Fuel Map



In the Borough of Riverton, an estimated 35 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 5% is located within the 1% annual chance flood area. A total of \$22,139,000 6.3% of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Borough of Riverton has a total of 44 NFIP policies, 9 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Riverton (B)	44	2	\$9,225	0	0	9	15	29

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM =

HAZUS =

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.32.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
RT-1	Install an emergency generator at critical facilities, such as the Riverton Fire Department/Police Department	Existing	All	1-1 1-2 3-2	Lead: Riverton Borough Support: NJOEM	High	Medium	HMGP	Short	High	PR
RT-2	Upgrade infrastructure including, the tidal Riverwall at Palmyra Harbour from tidal flood damage	Existing	Flood	1-1 2-1	Lead: Palmyra Borough and Riverton Borough	High	High	HMGP	Short	Medium	SP
RT-3	Where appropriate, seek to retrofit critical facilities in hazard prone areas	Existing	All	1-1 1-2 3-2	Borough Committee	High	Medium	PDM	Short	Medium	PP ES
RT-4	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New and Existing	All	1-1 2-1 3-1	Borough	High	Med	HMGP	On-going	High	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.



5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.32.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
1	3	HIGH	MEDIUM	YES	YES	NO	HIGH
2	2	HIGH	HIGH	YES	YES	NO	MEDIUM
3	3	HIGH	MEDIUM	YES	YES	NO	MEDIUM
4	3	HIGH	MEDIUM	YES	YES	NO	MEDIUM

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.32.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.2.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Borough of Riverton has no additional risk vulnerabilities that need to be addressed at this time.

9.2.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Borough of Riverton is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is 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 Riverton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.32-2: Riverton Flood Exposure Map

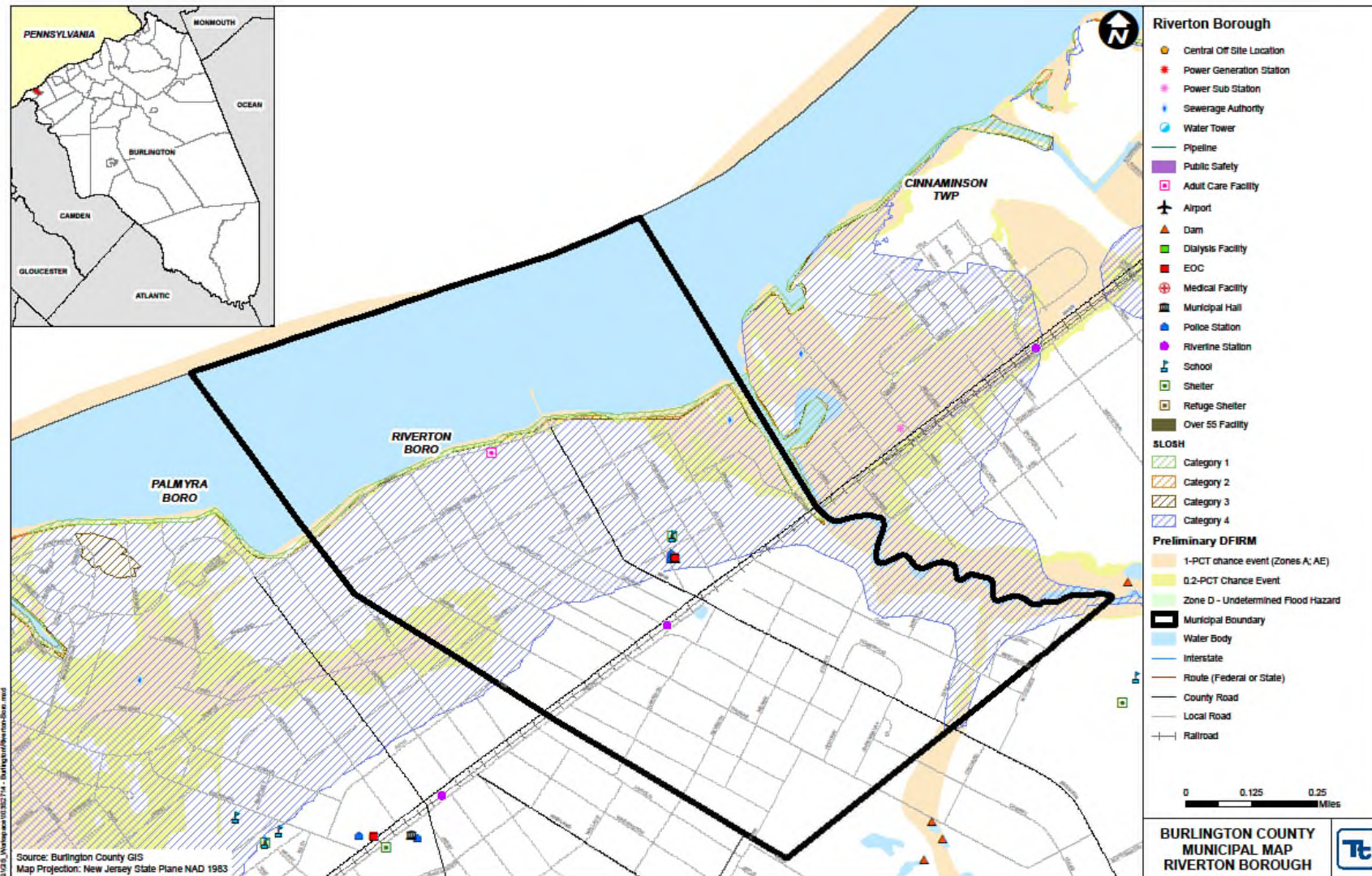
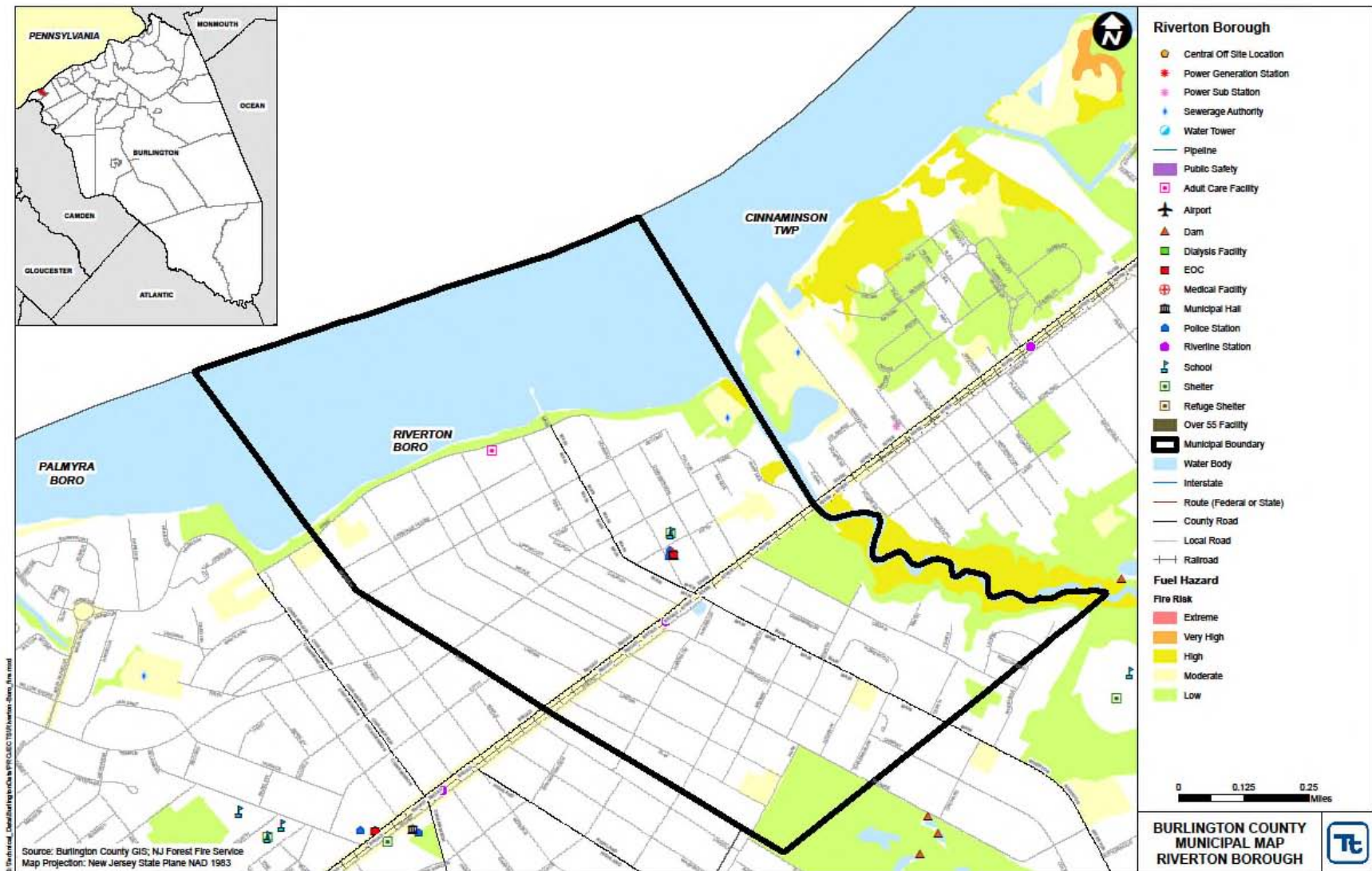


Figure 9.32-3: Riverton Wildfire Fuel Map



9.32.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of Borough of Riverton to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	
XFire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	X

9.32.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.33 Township of Shamong

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

9.33.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Stanley A. Rowe Title: OEM Coordinator Address: 105 Willow Grove Rd., Shamong, NJ 08088 Phone Number: (609) 268-1293 Cell: (609) 634-8154 Fax Number: (609) 268-2701 E-mail Address: njstanoem@aol.com	Name: Wallace Pickard, Jr. Title: Deputy OEM Coordinator Address: 105 Willow Grove Rd., Shamong, NJ 08088 Phone Number: (609) 268-0376 Cell: (609) 760-9978 Fax Number: (609) 268-2701 E-mail Address: wpickjr@comcast.net

9.33.2 PROFILE

9.33.2.1 Population

The population of the Township of Shamong is estimated to be 6,490, based on information gathered during the 2010 U.S. Census.

9.33.2.2 Location

The Township of Shamong is located in western Burlington County. The Township is bordered by Washington to the south, Medford to the north, and Tabernacle to the east and north-east. To the west, the Township is bordered by the Camden County municipality of Waterford.

9.33.2.3 Brief History

Shamong Township, incorporated in 1852, was originally a part of Evesham Township. It is one of many communities that make up the Pinelands National Reserve. Shamong is a Native American word meaning “place of the horn” or “place of many deer.” From 1758 until 1802, 3,284 acres of the township were home to the first and only Native American reservation in New Jersey. Prominent citizens of old Shamong included John B. Gardner, former mayor of Atlantic City, Civil War veteran, and United States congressman. James Still, the famed “black doctor of the Pines,” was born in Shamong in 1812, and his younger brother, William Still, is celebrated as the father of the Underground Railroad.¹

9.33.2.4 Governing Body Format

Shamong Township is governed under the Township form of government with a five-member Township Committee. The Township Committee is elected directly by the voters in partisan elections to serve three-

¹

http://www.arcadiapublishing.com/mm5/merchant.mvc?Screen=PROD&Product_Code=9780738564975

year terms of office on a staggered basis, with one or two seats coming up for election each year. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

Under the township form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint, including the township form, may appoint a municipal administration and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.33.2.5 GROWTH/DEVELOPMENT TRENDS

The Township of Shamong did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
None						

9.33.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland and Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None Reported to Twp.
Fire Management Assistance Declaration	FM-2695	Yes	May 15-29, 2007	None Reported to Twp.
Snowstorm	DR-1873	Yes	December 19- 20, 2009	None Reported to Twp.
Snowstorm	DR-1889	Yes	February 5-6,	None Reported to Twp.

² http://www.njslom.org/magart0307_p14.html

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			2010	
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None Reported to Twp.
Severe Winter Storm and Snowstorm	DR-1954	Yes	December 26-27, 2010	None Reported to Twp.
Tropical Storm/Hurricane Irene	DR-4021 / EM-3332	Yes	August 26 - September 5, 2011	None Reported to Twp.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Fire House Bldg Roof & Flood Damage (\$130K+-)

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.33.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Shamong.

Natural 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
Flood	1% Annual Chance: \$4,046,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,248,162 500-Year MRP: \$12,474,610 Annualized Loss: \$123,629	Frequent	30	Medium ^h
Severe Winter Storm	1% of GBS: \$5,007,040 5% of GBS: \$25,035,200	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme \$649,006,000 Risk	Frequent	33	High
Drought	Not available	Occasional	12	Low ^g
Earthquake	500-Year MRP: \$224,969 2,500-Year MRP: \$5,159,622 Annualized Loss: \$4,406	Rare	6	Medium ⁱ
Landslides	Not available	Rare	6	Low

Note

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- 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
- The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- Loss estimates are structural values only; does not include the value of contents.
- Loss estimates represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.
- Client input suggested Medium Risk, while project team estimates Low Risk.
- Client input suggested High Risk, while project team estimates Medium Risk.
- Client input suggested Low Risk, while project team estimates Medium Risk.

9.33.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Shamong indicated that the municipality has moderate planning, regulatory, administrative, technical, community resiliency and community political capability, and a moderate fiscal year capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.33.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Shamong.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	12/12/41			Building Inspection			
2) Zoning Ordinance	X	9/1/1970			Zoning Office			
3) Subdivision Ordinance	X	12/30/54		Chapter 110	Zoning Office			
4) NFIP Flood Damage Prevention Ordinance	N/A							
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	X			Chapter 110	Planning Board			
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	2005		Chapter 110-89	Road Dept			
8) Comprehensive Plan / Master Plan/ General Plan	X	2007		Chapter 110	Planning Board			
9) Capital Improvements Plan	X			Chapter 120-14	Planning Board			
10) Site Plan Review Requirements	N/A							
11) Open Space Plan	X	1990		Chapter 110-89	Planning Board			
12) Stream Corridor Management Plan	N/A							

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X			Chapter 147-9	OEM		+	Plan reviewed by County OEM
16) Emergency Response Plan	N/A							
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.33.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Twp. Engineer (Dante Guzzi 609 654-4440)
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Twp. Engineer (Dante Guzzi 609 654-4440)
3) Planners or engineers with an understanding of natural hazards	Y	Twp. Engineer (Dante Guzzi 609 654-4440)
4) NFIP Floodplain Administrator	Y	Twp. Engineer (Dante Guzzi 609 654-4440)
5) Surveyor(s)	Y	Twp. Engineer (Dante Guzzi 609 654-4440)
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Twp. OEM
9) Grant Writer(s)	Y	Burlington County Bridge Commission
10) Staff with expertise or training in benefit/cost analysis	N	

9.33.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Y
2) Capital Improvements Project Funding	Y
3) Authority to levy taxes for specific purposes	N
4) User fees for water, sewer, gas or electric service	N
5) Impact fees for homebuyers or developers of new development/homes	N
6) Incur debt through general obligation bonds	N
7) Incur debt through special tax bonds	N
8) Incur debt through private activity bonds	N
9) Withhold public expenditures in hazard-prone areas	N
10) State mitigation grant programs	N
11) Other	Y (FEMA)

9.33.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	N/A	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	N/A	
Storm Ready	-	
Firewise	-	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Shamong's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.33.6 MITIGATION STRATEGY

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

9.33.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in this section. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Mitigation for roads that provide key Emergency Services Access					X	No progress on this action has been completed due to personnel and budget restraints. This initiative will be discontinued by the Township
Identify, documents, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood-proof these properties.			X			The Township will continue to identify properties regarding flood mitigation opportunities. The Office of Emergency Management will work closely with the Floodplain Administrator.
Reduce the possibility of damage and losses due to wildfire			X			Continuous action due to the nature of wildfire and additional area for improvement.

9.33.6.2 Hazard Vulnerabilities Identified

In the Township of Shamong, estimated 281 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 7% is located within the 1% annual chance flood area. A total of \$32,852,000 (4.1%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Shamong has a total of 15 NFIP policies, 1 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) Properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Shamong (T)	15	4	\$8,927	0	0	1	1	14

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
Shamong Board of Education	Shamong (T)	School		X			
Shamong Twp. School District	Shamong (T)	School		X			

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)
- X = Facility located within the DFIRM boundary.

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

DFIRM= Digital Flood Insurance Rate Maps

HAZUS= Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.33.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
SG-1	Install fire breaks in strategic areas identified throughout the Township	X	Wildfire	1-1 3-1	Public Works	Med	Med	Federal, County, and US Fire Grants	Short	Medium	NR
SG-2	Conduct storm drain upgrades in identified areas throughout the Township	X	Floods, Severe Storms	1-1 3-1	Public Works	Med	Low	HMGP	Short	Medium	SP
SG-3	Conduct storm drain construction in identified areas throughout the Township	X	Flood, Severe Storms	1-1 3-1	Public Works	Low	Med	HMGP	DOF	Medium	SP
SG-4	Address and conduct power line tree management in identified problem areas throughout the Township	X	All Hazards	1-1 3-1	Public Works	High	Med	HMGP	DOF	Medium	NR
SG-5	Evaluate benefits of participating in CRS program	Existing	All Hazards	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	2,500/year	Twp./Public	On-going	Medium	PR
SG-6	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
SG-7	Improve municipal communication systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR

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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
SG-8	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES
SG-9	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
SG-10	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
SG-11	Promote the participation of Floodplain Administrators within the planning process and other activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
SG-12	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
SG-13	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short	High	PR
SG-14	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	NA	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP
SG-15	Evaluate the benefits of participating in the Firewise Program	Existing	Wildfire	1-1 1-5 2-1 3-1 4-1 5-1	Municipal OEM	Medium	Low	Municipal Government, OEM	Short Term	Medium	PR

Notes:



*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.33.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
SG-1	2	Medium	Medium	Y	Yes	No	Medium
SG-2	2	Medium	Low	Y	Yes	Yes	Medium
SG-3	2	Low	Medium	N	Yes	No	Medium
SG-4	2	High	Medium	Y	Yes	No	Medium
SG-5	7	Medium	Low	Yes	Yes	Yes	Medium
SG-6	3	Medium	Medium	Yes	Yes	No	High
SG-7	1	Medium	Medium	Yes	Yes	Yes	Medium
SG-8	3	Medium	Medium	Yes	Yes	Yes	Medium
SG-9	1	Medium	Low	Yes	Yes	Yes	High
SG-10	1	High	Low – High	Yes	Yes	No	High
SG-11	2	Medium	Medium	Yes	Yes	Yes	Medium
SG-12	3	Medium	Low	Yes	Yes	Yes	Medium
SG-13	3	Medium	Low	Yes	Yes	Yes	High
SG-14	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
SG-15	6	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.33.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.2.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Shamong has no additional risk vulnerabilities that need to be addressed at this time.

9.2.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Shamong is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Shamong has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.33-1: Shamong Flood Exposure Map

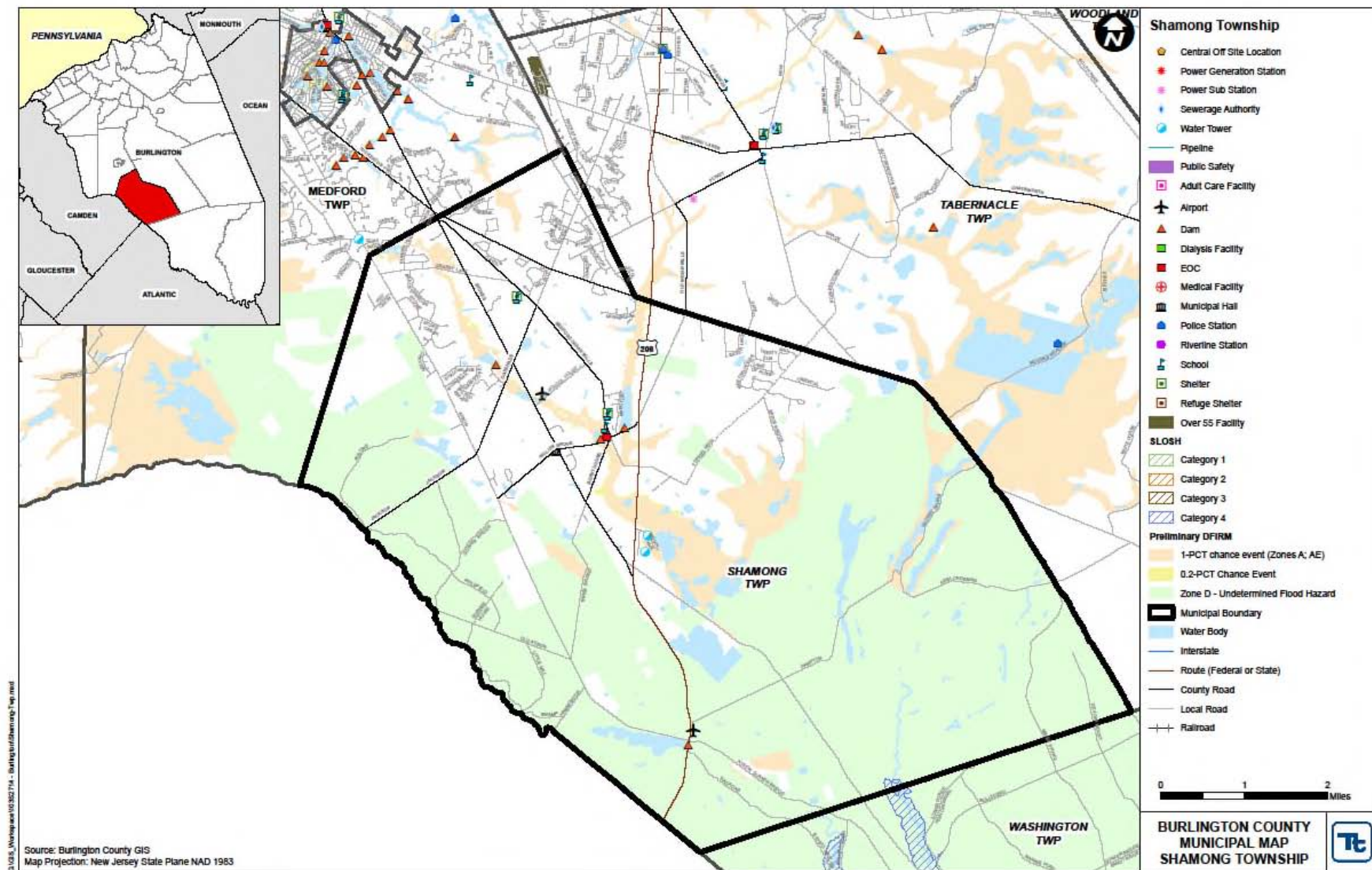
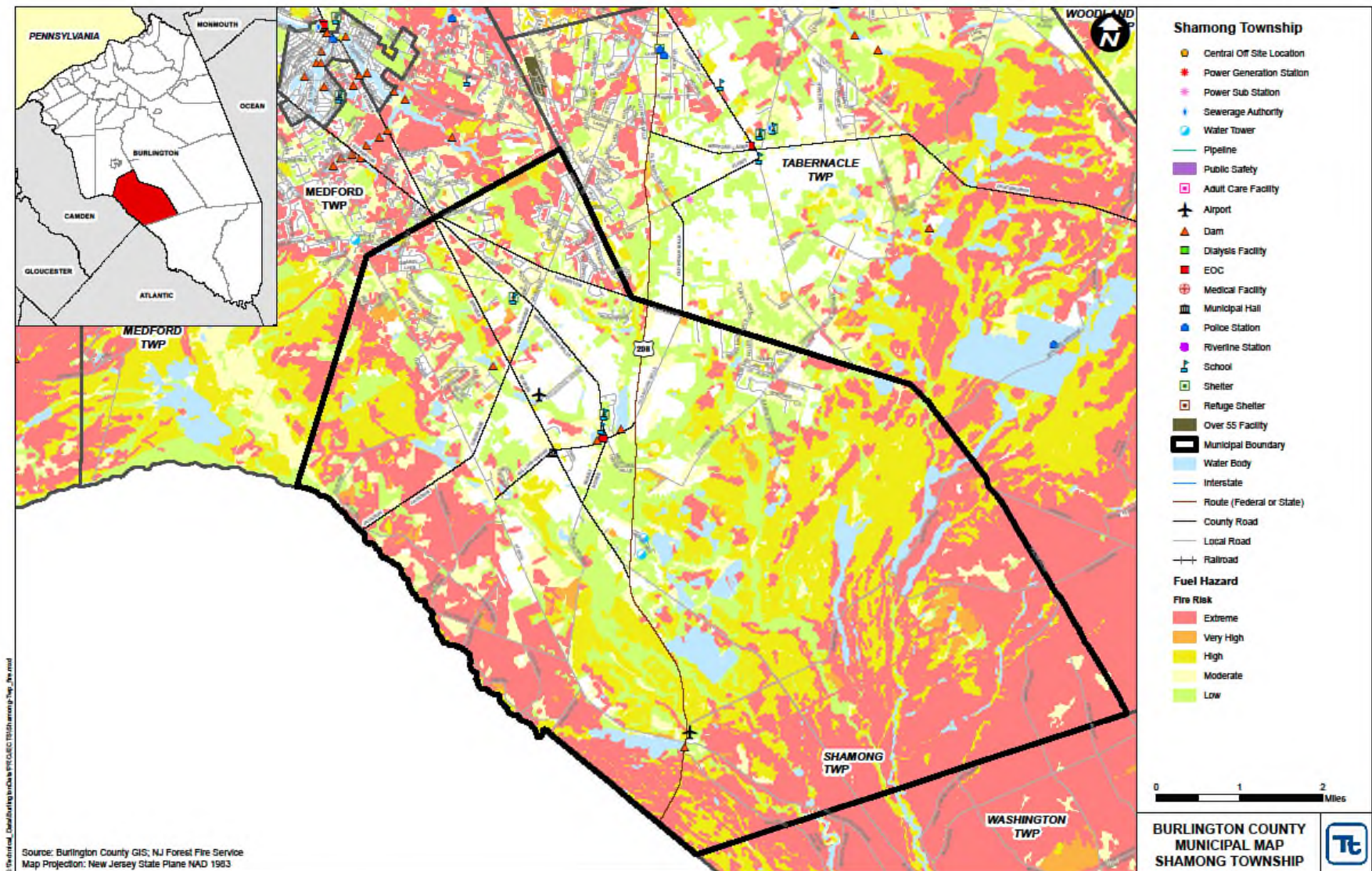


Figure 9.33-2: Shamong Wildfire Fuel Map



9.33.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of Township of Shamong to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.33.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.34 Township of Southampton

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

9.34.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Kathy Agolio Title: OEM Coordinator Address: 5 Retreat Rd., Southampton, NJ 08088 Phone Number: (732) 762-1706 Fax Number: (609) 388-5532 E-mail Address: southamptonoem02@southamptonnj.org	Name: Joe Boyle Title: Deputy OEM Coordinator Address: 27 Hillards Bridge Rd., Southampton, NJ 08088 Phone Number: (609) 859-3316 Fax Number: (609) 859-1465 E-mail Address: jboylehamptonlakesfire@hotmail.com

9.34.2 PROFILE

9.34.2.1 Population

The population of the Township of Southampton is estimated to be 10,464, based on information gathered during the 2010 U.S. Census.

9.34.2.2 Location

The Township of Southampton is centrally located within Burlington County. The Township is bordered by Tabernacle to the south, Medford to the west, Lumberton and Eastampton to the north-west and north, respectively, Pemberton Township to the north-east and east, and Woodland to the south-east.

9.34.2.3 Brief History

What is now Southampton was originally incorporated as Coaxen Township by an Act of the New Jersey Legislature on March 10, 1845, from portions of Northampton Township (now known as Mount Holly Township). The name lasted for about three weeks when it was renamed Southampton Township on April 1, 1845. Portions of the township were taken from Pemberton Township, Lumberton, Woodland, and Tabernacle.¹

9.34.2.4 Governing Body Format

Southampton Township is governed under the Township form of government with a five-member Township Committee. The Township Committee is elected directly by the voters in partisan elections to serve three-year terms of office on a staggered basis, with one or two seats coming up for election each year. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

¹ <http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

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Under the township form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint, including the township form, may appoint a municipal administration and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.34.2.5 Growth/Development Trends

The Township of Southampton did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
None						

9.34.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5.4 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.4 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	EM-2695	Yes	May 15-19, 2007	None
Thunderstorm/ Flooding	N/A	No	March 7-9, 2008	The Township experiences road closures (Red Lion Rd. and Maple Ave.) as a result of downed trees and debris. In addition, areas of the Township experienced power outages as a result of this event. Emergency protective services protected safety and health

² http://www.njslom.org/magart0307_p14.html

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
				of residents and conducted structural monitoring and repair, and debris removal.
Winter Storm	DR-1873	Yes	December 19-20, 2009	Emergency protective services were initiated to open and maintain roads and snow removal. Total cost for such services was approximately \$88K.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Emergency protective services were initiated to open and maintain roads and snow removal. Total cost for such services was approximately \$64K
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	
Winter Storm	DR-1954	Yes	December 26-27, 2010	Emergency protective services were initiated to open and maintain roads and snow removal. Total cost for such services was approximately \$15K
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	During this event, residents were evacuated for protection of life safety. Flooding caused extensive damage to portions of the Township, particularly along the south branch of the Rancocas River. Numerous roads were closed or impassable due to debris and flooding. Trinity church experienced facility damage, and the Vincetown Tabernacle Telephone Museum was inundated by the Rancocas, causing nearly \$30K in damage. 46 single family homes experienced minor damage.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Utility outages in the Liesuretowne section of the Township affected 342 homes in addition to

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
				homes an the areas of Burrs Mill Road and Firelane for four days. 30 homes experienced minor to major damage.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.34.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Southampton.

Natural 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
Flood	1% Annual Chance: \$27,750,000	Frequent	33	High
Severe Storm	100-Year MRP: \$1,959,866 500-Year MRP: \$15,666,963 Annualized Loss: \$184,197	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$8,237,370 5% of GBS: \$41,186,850	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$808,289,000	Frequent	33	High
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$420,416 2,500-Year MRP: \$9,429,203 Annualized Loss: \$8,119	Rare	6	Medium
Landslides	Not available	Rare	6	Low

Note

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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

Medium = Total hazard priority risk ranking of 15-30



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Low = Total hazard risk ranking below 15

- c. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- d. Loss estimates are structural values only; does not include the value of contents.
- e. Loss estimates represent both structure and contents.
- f. The HAZUS-MH earthquake model results are reported by Census Tract.



9.34.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Southampton indicated that the municipality has a limited community political capability; a moderate planning, regulatory, fiscal and, community resiliency capabilities; a high administrative and technical capability; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

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9.34.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Southampton.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Agency Responsible	Effect on Loss Reduction: + Support O Neutral Hinder	Change Since Last Plan: + Positive Negative	Comments
	In Place	Date Adopted or Updated	Under Develop -ment					
1) Building Code	X	2005		Section 8-1, Pg. 801	Construction	+	+	
2) Zoning Ordinance	X	2005		Section 12, Section 19, Section 1201	Governing Body, Construction, Zoning	+	+	
3) Subdivision Ordinance	X	2008		Section 12-5	Planning	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	2005		17-1	Governing Body, Construction	+	+	
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	X	2005			Governing Body, Planning	+	+	
6) Floodplain Management / Basin Plan	X	2005		17-4	Township	+	+	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Agency Responsible	Effect on Loss Reduction: + Support O Neutral Hinder	Change Since Last Plan: + Positive Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
					Engineer, Construction			
7) Stormwater Management Plan/Ordinance	X	2005		21-6.2	Township Engineer, Construction, County	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X	2005			Governing Body, Planning	+	+	
9) Capital Improvements Plan	X	2005		12-9.5, Pg. 12221	Planning	+	+	
10) Site Plan Review Requirements	X	2005			Planning	+	+	
11) Open Space Plan	X	2005			Planning	+	+	
12) Stream Corridor Management Plan	X	2005			Engineer	+	+	
13) Watershed Management or Protection Plan	X	2005			Engineer	+	+	
14) Economic Development Plan	X	2005			Governing Body, Planning	+	+	
15) Comprehensive Emergency Management Plan	X	2010			Governing	+	+	Reviewed Annually –

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Agency Responsible	Effect on Loss Reduction: + Support O Neutral Hinder	Change Since Last Plan: + Positive Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
					Body, OEM			next review in 2014
16) Emergency Response Plan	X	2010			Governing Body, OEM	+	+	To be reviewed and updated in 2014
17) Post Disaster Recovery Plan	X	2010			OEM	+	+	To be reviewed and updated in 2014
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	X	Unknown			Planning and Zoning	+	+	
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A							

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9.34.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Alaimo Engineering/Construction Official
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Alaimo Engineering/Construction Official
3) Planners or engineers with an understanding of natural hazards	Y	Alaimo Engineering/LEPC/EMC
4) NFIP Floodplain Administrator	Y	Township Construction Dept./Jody Mazeall
5) Surveyor(s)	Y	Alaimo Engineering
6) Personnel skilled or trained in GIS applications	Y	Alaimo Engineering
7) Scientist familiar with natural hazards	Y	Doug Melegari
8) Emergency Manager	Y	Kathleen Agolio, OEM
9) Grant Writer(s)	Y	Bridge Commission
10) Staff with expertise or training in benefit/cost analysis	Y	Nancy Gower, Treasurer; Kathleen D, Hoffman, Clerk/Administrator

9.34.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	No
11) Other	N/A

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9.34.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	
Public Protection	3	Unknown
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Southampton's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.34.6 MITIGATION STRATEGY

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

9.34.6.1 Past Mitigation Actions/Status

There are no mitigation items for the Township of Southampton, as the Township did not take part in the 2008 effort

9.34.6.2 Hazard Vulnerabilities Identified

The Township indicated flooding in various areas, including Floyd Avenue, Meadowyck, Retreat/Big Hill, and Bridle Path.

In the Township of Southampton, estimated 1,588 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 26% is located within the 1% annual chance flood area. A total of \$217,814,000 (16.7 %) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Southampton has a total of 127 NFIP policies, 73 of which are located within the 1% annual chance flood area. FEMA has identified 14 Repetitive Loss (RL) property and 3 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Southampton (T)	127	109	\$2,208,330	14	3	73	78	49

Source:

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
2. Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
3. The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

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Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
Vincent Emergency Squad	Southampton (T)	Fire	X	X	7.6	10.4	480

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.34.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
SH-1	Scarborough Way(Leisure Towne) Replace damaged drainage pipe and re-line. Reduce road and property flooding in that area.	Existing	Flood	1-1 2-1 4-1	Township committee and Engineer	Medium	Medium	Local 2013 Road Project	Short	High	PP SP
SH-2	Community Wildfire Protection Plan (Implement Plan for communities to participate in fire awareness programs, clean-up days, thereby reducing possibility of damage to persons and property from wildfires.	N/A	Fire	1-1 1-5 3-1 4-1	NJ Forest Service Shade Tree Committee	High	Medium	Shade Tree Grants Municipal Budget	Short	High	NR/PE
SH-3	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storms	1-1 1-5 3-1 4-1	NOAA/ST OEM Municipality with support from NJOEM, FEMA, and county	Medium	Low	Municipal Budget Grants	Short DOF	Medium	NR/PE

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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
SH-4	Obtain Firewise community status by implementing and participating in strategies to prevent and reduce damage due to wildfires.	N/A	Fire	1-1 1-5 3-1 4-1	NJ Forest Service/ST Shade Tree Commission	High	Medium	NJ Forest Service	Short	High	PP/NR/PE
SH-5	Wildfire Mitigation Plan (Create and complete this plan, implemented by ST Shade Tree Committee in conjunction with NJ Forest Service and ST Emergency Management to prevent and reduce damage from wildfires.)	N/A	Fire	1-1 1-5 3-1 4-1	ST Shade Tree commission/ NJ Forest Service/ST Emergency Management	High	Medium	NJ Forest Service/Shade Tree Grant Writing	Short	High	PP/NR/PE
SH-6	Rancocas Creek Watershed Management/South Branch (Between Race and Mill Streets in Vincentown portion of ST (Obtain inspection of area in regards to soil erosion undermining trees along this area. Implement removal of soil buildup in this area, enhancing safe	N/A	Flood	1-3 1-4 3-1	ST/DPW/Independent contractor	High	Medium	Federal, State, County Grants, NFIP	On-going	High/Medium DOF	PP/NR/ES SP

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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
	flow of water thereby reducing threat of flood damage to homes, historical and first responder buildings. Construction of flood/retaining walls..										
SH-7	Dry Hydrants-stand pipes(Participate and implement recommendations from CWPP to inspect, clean, and repair existing 5 standpipes in ST.Install new dry hydrant on border of ST and Medford. Enhance ability of fire departments to contain and control wildfires in areas that do not have water fire hydrants	Existing	Fire	1-3 1-4 3-1	NJ Forest Service/ST DPW	High	Medium	NJ Forest Service/CW PP	Short	High	PP/NR/PR
SH-8	Maintain and enhance 911 notifications via land lines, cell phone, and email alerts. Purchase new portable and mobile radios plus base stations to improve awareness and	N/A	All	1-1 1-5 4-1 3-1	ST OEM/ Burlington County OEM	High	Low	Southampt on Township Municipal Budget	On-going	Low	PE/ES/PR

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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
	response during an emergency. Maintain and update EM website to provide preparedness information to residents.										
SH-9	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
SH-10	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short	Medium	PE
SH 11	Old Forge Road Leisure Towne section of ST.(Provide access to this road for local fire departments, LT	N/A	Fire	1-1 1-4 1-5 3-1	LT Maintenance JCPL	High	Medium	LT JCPL	Short	High	PP/NR/ES

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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
	Maintenance, and JCPL. Reduce possible length of power outages, improve ability of fire departments to protect residential homes adjacent to this road that may be impacted by wildfires.										
SH-12	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	High	High	Municipal Budget, grant funding	Short	Medium High	ES PR/PP
SH-13	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short	High	PR, ES
SH-14	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
SH-15	Promote the participation of Floodplain	N/A	Flood	1-4 4-2	Municipality with support from County,	Medium	Medium	Municipal Budget	Short	High	PR

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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
	Administrator within the planning process and other related activities.				NJOEM and FEMA						
SH-16	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Administration Governing Body	Medium	Low	Municipal Budget	Short	High	PR
SH-17	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	N/A	Severe Storm, Severe Winter Storm	1-5 4-1	Shade Tree Committee	Medium	Low / Medium	Shade Tree Committee	On-going	Medium	PR
SH-18	Explore floodproofing or relocating Vincent Fire Department building	Existing	Flood, Severe Storm	1-1 1-3 2-2 3-2	Fire Department Governing Body	High	High	FEMA HMGP Grants	Long Term DOF	Medium	PR PP
SH-19	Consider acquiring, elevating, or relocating repetitive loss and severe repetitive loss	Existing	Flood	1-1 2-1 4-2	Municipality with support from County, NJOEM and FEMA	High	High	FEMA HMGP Grants	DOF	High	PP

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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
	properties in the Township										

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.34.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
SH-1	3	Medium	Medium	Yes	Yes	Yes	High
SH-2	4	High	Medium	Yes	Yes	Yes	High
SH-3	4	High	Medium	Yes	Yes	Yes	Medium
SH-4	4	High	Medium	Yes	Yes	No	High
SH-5	4	High	Medium	Yes	Yes	No	High
SH-6	4	High	Medium	Yes	Yes	No	High/Med
SH-7	3	High	Medium	Yes	Yes	No	High
SH-8	3	High	Medium	Yes	Yes	Yes	Low
SH-9	3	High	Low	Yes	Yes	Yes	Medium
SH-10	7	Medium	Low	Yes	Yes	Yes	Medium
SH-11	3	Medium	Medium	Yes	Yes	No	High
SH-12	1	Medium	Medium	Yes	Yes	Yes	Med/High
SH-13	3	Medium	Medium	Yes	Yes	Yes	High
SH-14	1	Medium	Low	Yes	Yes	Yes	High
SH-15	1	High	Low – High	Yes	Yes	No	High
SH-16	2	Medium	Medium	Yes	Yes	Yes	High
SH-17	3	Medium	Low	Yes	Yes	Yes	Medium
SH-18	3	Medium	Low	Yes	Yes	Yes	Medium

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Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
SH-19	3	High	High	Yes	Yes	No	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.34.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.2.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Southampton has no additional risk vulnerabilities that need to be addressed at this time.

9.2.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Southampton is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Southampton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

SECTION 9.34: TOWNSHIP OF SOUTHAMPTON

Figure 9.34-1: Southampton Flood Exposure Map

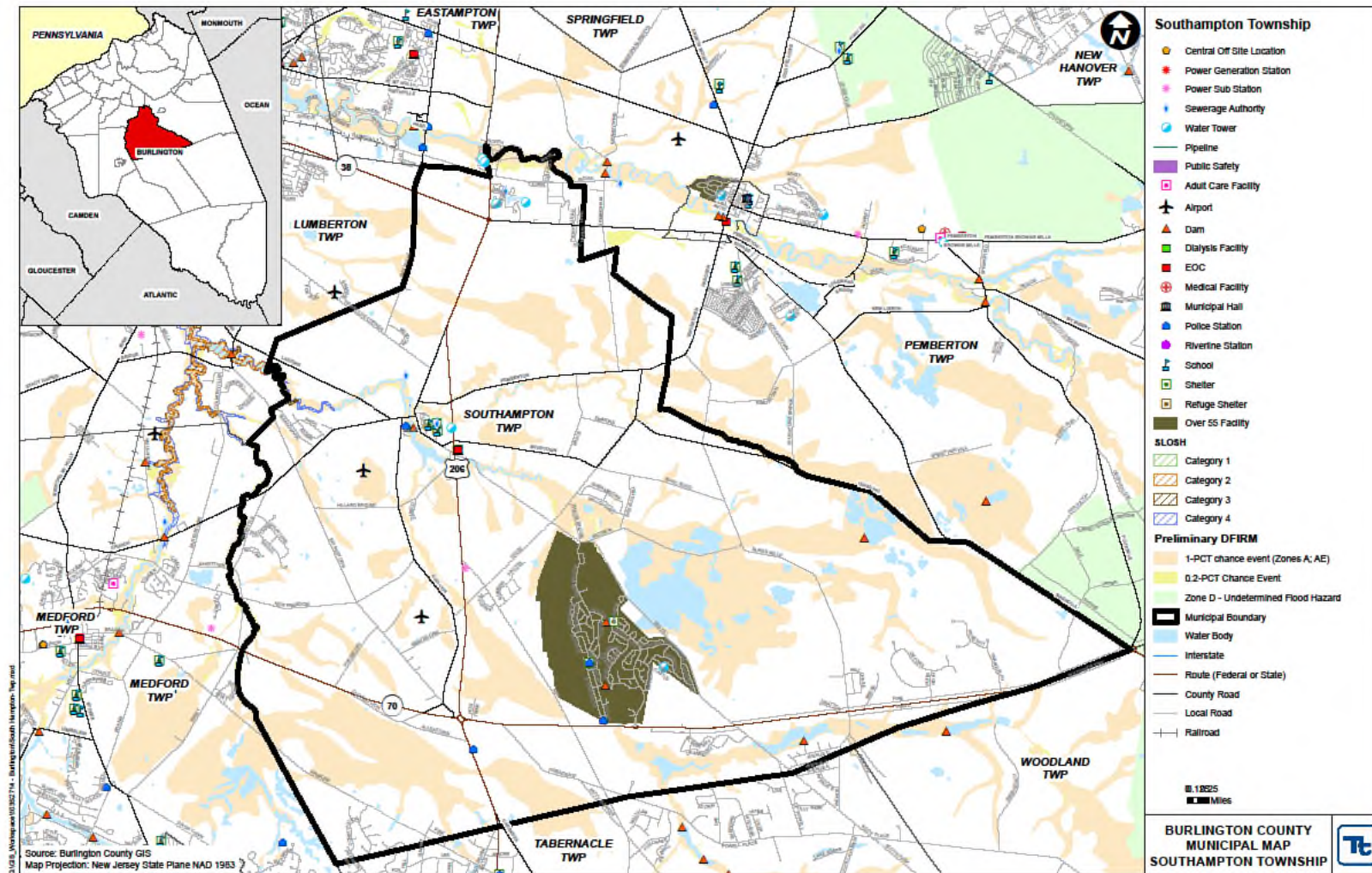
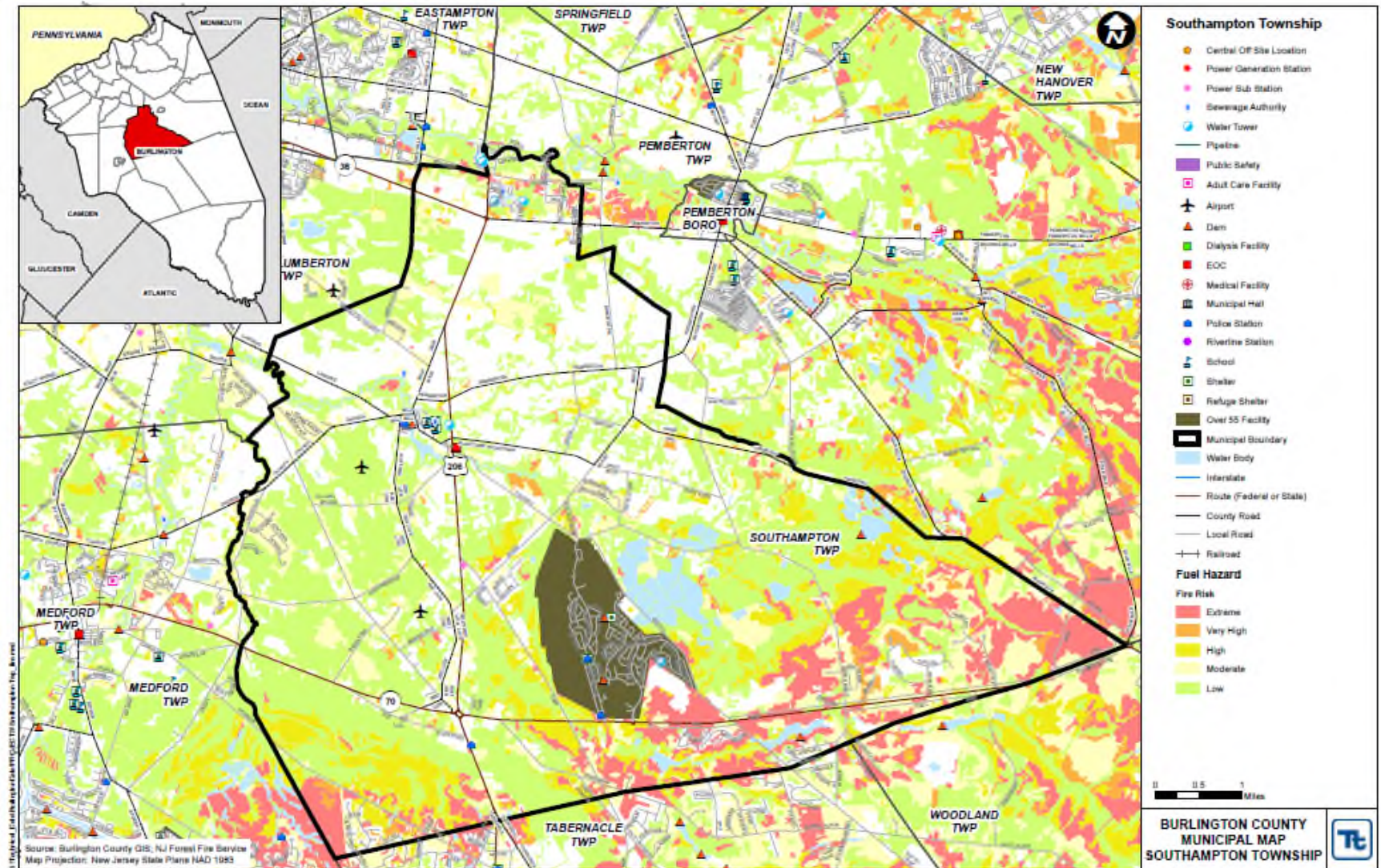


Figure 9.34-2: Southampton Wildfire Fuel Map



9.34.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of Township of Southampton to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.35 Township of Springfield

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

9.35.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Eric Trout Title: Police Chief/Emergency Management Coordinator Address: 2159 Jacksonville-Jobstown Rd., Jobstown, NJ 08041 Phone Number: (609) 723-5100 Fax Number: (609) 723-1080 E-mail Address: etrout@springfieldtwppd.org	Name: J. Paul Keller Title: Township Manager Address: 2159 Jacksonville-Jobstown Rd., Jobstown, NJ 08041 Phone Number: (609) 723-2464 Ext. 22 Fax Number: (609) 723-6591 E-mail Address: mgr@springfieldtownship.org

9.35.2 PROFILE

9.35.2.1 Population

The population of the Township of Springfield is estimated to be 3,414, based on information gathered during the 2010 U.S. Census.

9.35.2.2 Location

The Township of Springfield is located in the northern portion of Burlington County and encompasses approximately 30 square miles. The Township is bordered by Pemberton Township to the south, Eastampton to the southwest, Westampton to the west, Burlington Township and Florence to the northwest, Mansfield to the north, Chesterfield to the northeast, North Hanover to the east, and New Hanover to the southeast.

9.35.2.3 Brief History

Founded via Royal Charter on November 6, 1688, three hamlets were eventually settled within the township. Known locally as the three J's, they are Jacksonville, Jobstown, and Juliustown. Springfield Township was incorporated as one of New Jersey's initial 104 townships by an Act of the New Jersey Legislature on February 21, 1798.¹

9.35.2.4 Governing Body Format

Springfield Township operates under the Council-Manager (Faulkner Act) form of municipal government. The Township Council consists of five members elected to four-year terms on a staggered basis, with two or three seats coming up for election every other year. At a reorganization meeting following elections, the council selects a mayor and deputy mayor from among its members to serve two-year terms of office.

¹ <http://www.springfieldtownship.org/index.html>

Under this form, the council is the legislative body of the municipality but also appoints the positions of Municipal Clerk, Tax Assessor and well as provides for appointments of members of Boards, Commissions and Authorities. Perhaps most importantly, the council appoints a qualified manager to serve as the chief executive.

The mayor can either be selected from the council or directly elected. Either way, the mayor serves as the presiding member of the council. The Manager has the full administrative responsibility for the municipality, including appointment of department heads as well as subordinates, preparation and presentation of the budget and the negotiation of contracts.²

9.35.2.5 Growth/Development Trends

The Township of Springfield did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
None						

9.35.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland and Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire Management Assistance Declaration	FM-2695	Yes	May 15-29, 2007	None
Snowstorm	DR-1873	Yes	December 19-20, 2009	The Township had losses for police overtime for traffic control due to excessive snow and material and labor cost associated with the sanding and

² http://www.njslom.org/magart0307_p14.html

SECTION 9.35: TOWNSHIP OF SPRINGFIELD

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
				plowing of snow from the roadways. Several roads were closed or impassible as a result of the event.
Snowstorm	DR-1889	Yes	February 5-6, 2010	The Township incurred losses for material and labor associated with sanding and plowing of roadways. Several roads were closed or impassible as a result of the event.
Severe Storms, Flooding	DR-1897	Yes	March 12- April 15, 2010	None
Severe Winter Storm and Snowstorm	DR-1954	Yes	December 26-27, 2010	The Township experienced closed or impassable roads due to snow accumulation and incurred cost based on the removal of such snow.
Tropical Storm/Hurricane Irene	DR-4021 / EM-3332	Yes	August 26 - September 5, 2011	The Township experienced power outages and road closures. Roads were damaged, and volunteer firefighters responded to numerous calls related to flooded basements. Further costs included overtime equipment for flood assistance, and debris removal.
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	The Township experienced power outages and road closures. Numerous pieces of road and safety equipment were lost during the event and volunteer firefighters responded to numerous calls related to flooded basements. Further costs included overtime equipment for flood assistance, and debris removal.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

9.35.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Springfield.

Natural 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
Flood	1% Annual Chance: \$3,834,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$650,398 500-Year MRP: \$3,548,219 Annualized Loss: \$56,897	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$2,824,530 5% of GBS: \$14,122,650	Frequent	33	High ^h
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$372,911,000	Frequent	24	Medium ⁱ
Drought	Not available	Occasional	12	Low ^g
Earthquake	500-Year MRP: \$170,342 2,500-Year MRP: \$4,007,620 Annualized Loss: \$3,624	Rare	6	Medium ⁱ
Landslides	Not available	Rare	6	Low

Note

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- 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
- The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- Loss estimates are structural values only; does not include the value of contents.
- Loss estimates represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.
- Client input suggested Medium Risk, while project team estimates Low Risk.
- Client input suggested Medium Risk, while project team estimates High Risk.
- Client input suggested Low Risk, while project team estimates Medium Risk.

9.35.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Springfield indicated that the municipality has high planning, regulatory, community resiliency and community political capability; moderate administrative and technical capability; limited fiscal capability; and a moderate to very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.35.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Springfield.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	12/14/1994		Chap 70	Construction			
2) Zoning Ordinance	X	12/14/1994		Chap. 215	Zoning			
3) Subdivision Ordinance	X	12/14/1994		Chap. 185	Planning Bd.			
4) NFIP Flood Damage Prevention Ordinance	N/A							
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	X	3/8/2006		Chap. 215-13	Zoning			Township adopted 10 acre zoning to limit development and maintain rural area
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	6/8/2005		Chap. 179	Manager			
8) Comprehensive Plan / Master Plan/ General Plan	X							

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop -ment					
9) Capital Improvements Plan	X	4/10/2013		Ord. 2013-02	Governing Body			Authorized funding for generators for emergency facilities and road improvement projects
10) Site Plan Review Requirements	X	12/14/1994		Chap. 164	Planning/ Zoning Board			
11) Open Space Plan	N/A							
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X	2012						
16) Emergency Response Plan	X	2012						
17) Post Disaster Recovery Plan	X	2012						
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.35.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	N	Contract for Twp. Planner/Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	N	Contract for Twp. Planner/Engineer
3) Planners or engineers with an understanding of natural hazards	N	Contract for Twp. Planner/Engineer
4) NFIP Floodplain Administrator	Y	Construction
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Police Dept.
9) Grant Writer(s)	Y	Township Manager
10) Staff with expertise or training in benefit/cost analysis	N	

9.35.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	Yes
10) State mitigation grant programs	Yes
11) Other	N/A

9.35.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Springfield's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.35.6 MITIGATION STRATEGY

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

9.35.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.35.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Clean out the beaver dams from Barkers Brook Stream bed and other debris that restricts flow during heavy rains	X					No action has been accomplished on the action due to budget restraints and personnel.
Raising of the road bed on Warners Road near the bridge to help keep the roadway from flooding	X					The Township does not have sufficient funds to budget for this project.

9.35.6.2 Hazard Vulnerabilities Identified

Township officials noted that during recent storms with high winds, numerous trees have fallen thus blocking roadways for days and/or damaging power lines. The results of these events include impassible roadways and power outages.

In the Township of Springfield, an estimated 52 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 10% is located within the 1% annual chance flood area. A total of \$217,814,000 (4.5%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Springfield has a total of 18 NFIP policies, 5 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Springfield (T)	18	5	\$136,102	0	0	5	5	13

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate										
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event			Potential Loss from 0.2% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.35.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
SF-1	Juliustown-Georgetown Rd and other areas which are deemed to be risk areas – remove trees that line one side of the road with and open field on the other side	N/A	High Wind	1-1	Lead: Twp. Manager	High	High	HMA programs with local or county match	DOF	Medium	PP
SF-2	Purchasing of standby generators for the Jacksonville Fire Co., Juliustown Fire Co., Springfield Township Fire Co., and Springfield Township EMS	Existing	Loss of power and emergency facilities during power outages	1-2 1-5 3-2	Springfield Township Municipality	High	High	Bonding	Short	High	ES
SF-3	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
SF-4	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
SF-5	Improve municipal communication systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR

SECTION 9.35: TOWNSHIP OF SPRINGFIELD

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
SF-6	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
SF-7	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
SF-8	Promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
SF-9	Enhance community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
SF-10	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short	High	PR
SF-11	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	NA	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP

Notes:

*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:



ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:



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

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.35.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
SF-1	1	High	High	Yes	Yes	No	High
SF-2	3	High	High	Yes	Yes	Yes	High
SF-3	7	Medium	Low	Yes	Yes	Yes	Medium
SF-4	3	Medium	Medium	Yes	Yes	No	High
SF-5	1	Medium	Medium	Yes	Yes	Yes	Medium
SF-6	1	Medium	Low	Yes	Yes	Yes	High
SF-7	1	High	Low – High	Yes	Yes	No	High
SF-8	2	Medium	Medium	Yes	Yes	Yes	Medium
SF-9	3	Medium	Low	Yes	Yes	Yes	Medium
SF-10	3	Medium	Low	Yes	Yes	Yes	High
SF-11	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.35.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.35.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Springfield has no additional risk vulnerabilities that need to be addressed at this time.

9.35.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Springfield is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Springfield has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.35-1: Springfield Flood Exposure Map

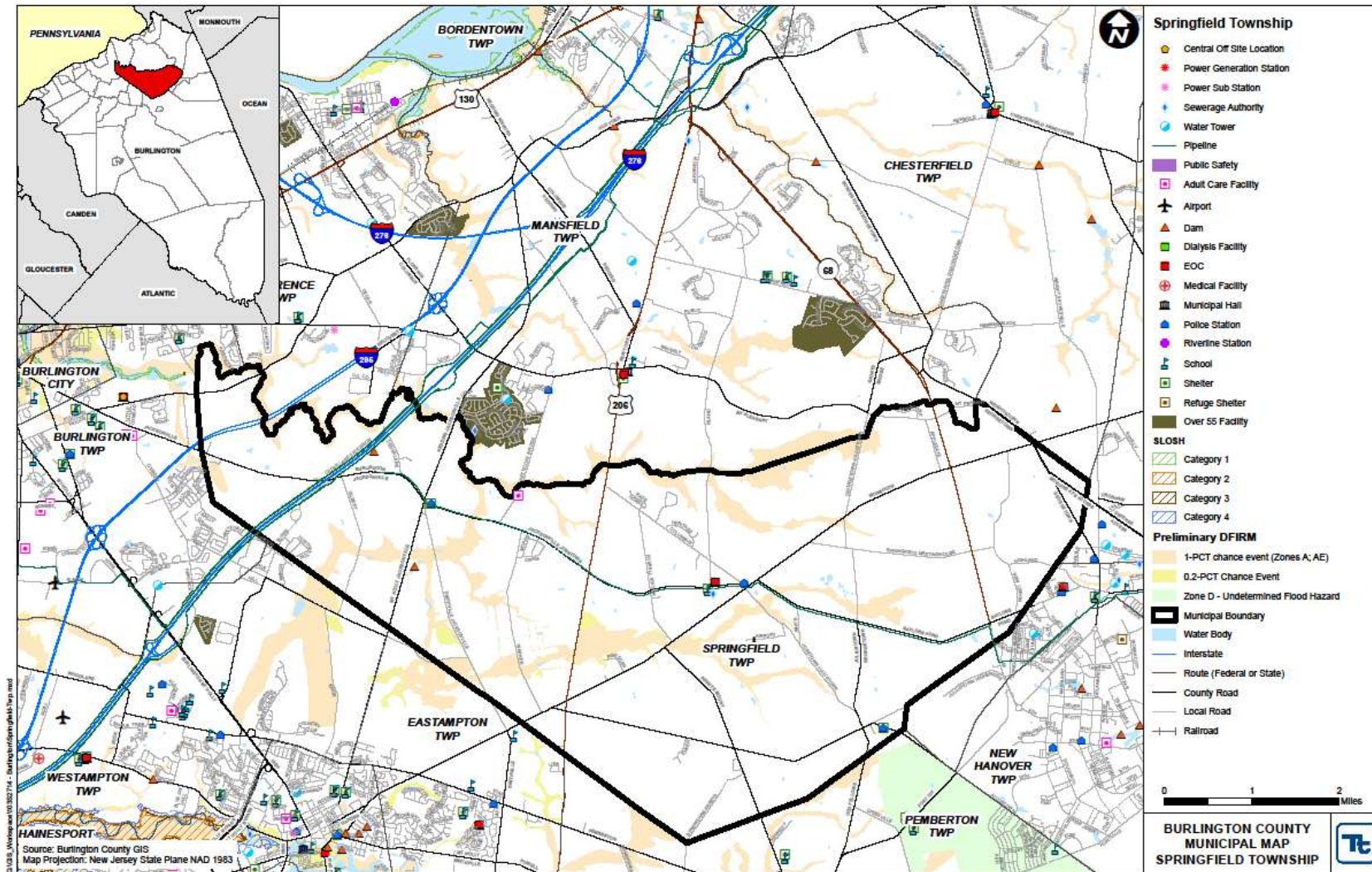
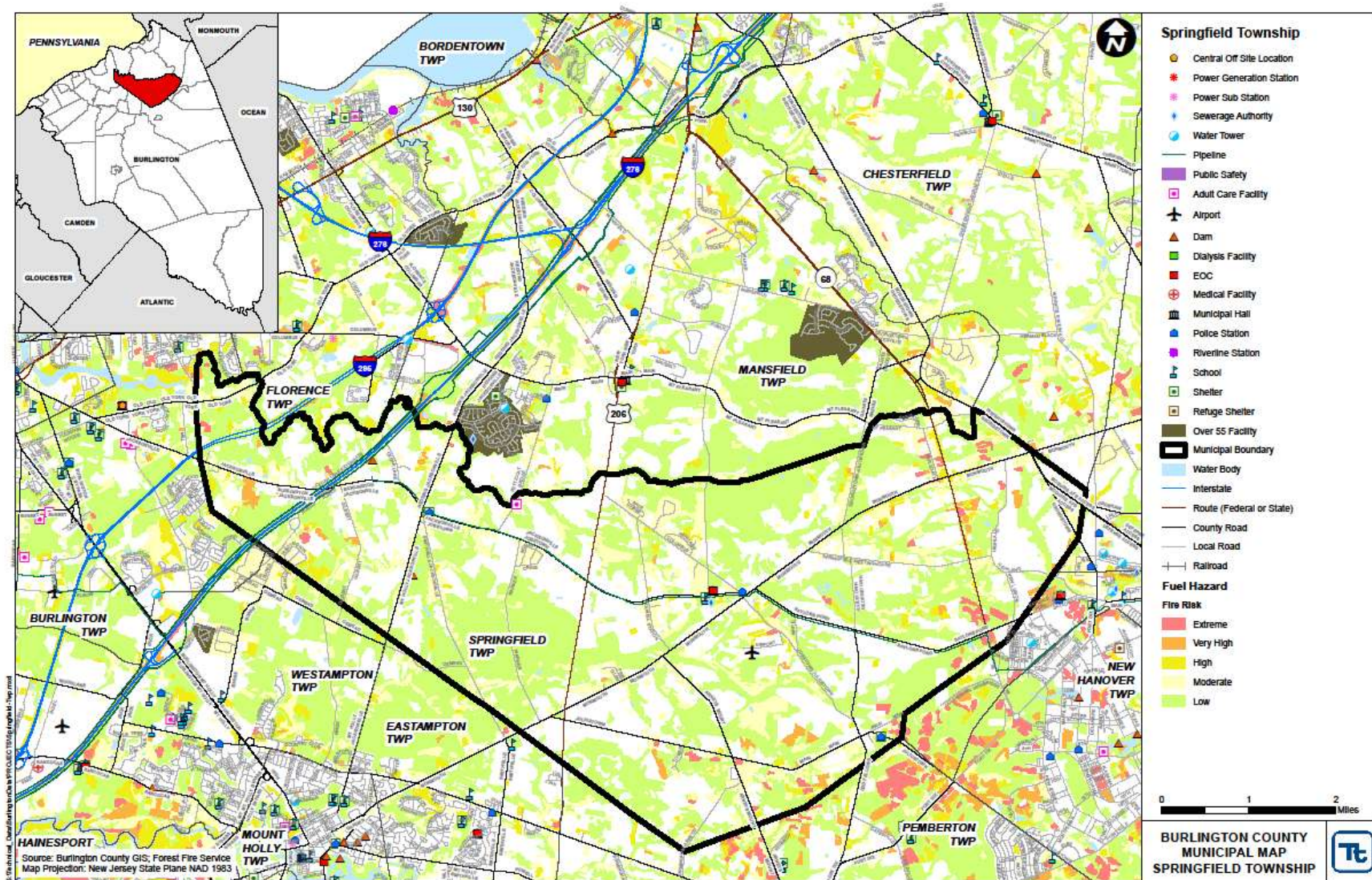


Figure 9.35-2: Springfield Wildfire Fuel Map



9.35.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Springfield to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.		X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.35.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.36 Township of Tabernacle

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

9.36.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: William C. Lowe Title: Emergency Management Coordinator Address: 163 Carranza Rd., Tabernacle, NJ 08088 Phone Number: (609) 234-3714 Fax Number: (609) 268-7430 E-mail Address: wlowe@townshiptabernacle-nj.gov	Name: Douglas Cramer Title: Township Administrator Address: 163 Carranza Rd., Tabernacle, NJ 08088 Phone Number: (609) 268-1220 Fax Number: (609) 268-7430 E-mail Address: dcramer@townshiptabernacle-nj.gov

9.36.2 PROFILE

9.36.2.1 Population

The population of the Township of Tabernacle is estimated to be 6,949, based on information gathered during the 2010 U.S. Census.

9.36.2.2 Location

Tabernacle Township is a Township in Burlington County, New Jersey. As of the 2010 US Census, the township population was 6,949. Tabernacle was incorporated as a township by an Act of the New Jersey Legislature on March 22, 1901, from portions of Shamong, Southampton and Woodland Townships. According to the United States Census Bureau, the township has a total area of 49.614 square miles (128.501 km²), of which, 49.120 square miles (127.221 km²) of it is land and 0.494 square miles (1.280 km²) of it (1.00%) is water.

9.36.2.3 Brief History

The modern-day township sprang from the Village of Tabernacle, named for the log-cabin Tabernacle in the Wilderness Church, established in 1778 by Presbyterian minister John Brainerd. Brainerd was a missionary who sought to convert the indigenous Lenni-Lenape Indians to Christianity.

From its founding by Brainerd through the entire 19th century, the township was part of Southampton Township. Its two most historically significant buildings, Nixon's General Store (1850) and the Junior Order of Mechanics Building (1875), were erected during this era. The latter became the town hall in 1966.

In 1901, Tabernacle was chartered as its own municipality.¹

¹ http://www.courierpostonline.com/apps/pbcs.dll/article?AID=2006610190363&nclick_check=1

9.36.2.4 Governing Body Format

The Township of Tabernacle is governed under the Township form of government with a five-member Township Committee. The Township Committee is elected directly by the voters in partisan elections to serve three-year terms of office on a staggered basis, with one or two seats coming up for election each. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

Under this form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint a municipal administrator and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.36.2.5 Growth/Development Trends

The Township of Tabernacle did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
None						

9.36.3 NATURAL HAZARD EVENT HISTORY SINCE 2007

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14- 20, 2007	Minor damage incurred to the Township with minor power outages and Public Works employee overtime.
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	Minor damage incurred to the Township with minor power outages and Public Works employee overtime. Required

² http://www.njslom.org/magart0307_p14.html

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
				some closing of roads due to snow.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Minor damage incurred to the Township with minor power outages and Public Works employee overtime. Required some closing of roads due to snow.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Minor damage incurred to the Township with minor power outages and Public Works employee overtime.
Winter Storm	DR-1954	Yes	December 26-27, 2010	Minor damage incurred to the Township with minor power outages and Public Works employee overtime. Required some closing of roads due to snow.
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	Minor damage incurred to the Township with minor power outages and Public Works employee overtime.
South Park Fire		Yes/Township Designated	April, 2012	Minor damage incurred to the Township. 1000+ acres of forest burned. Fire was made more dangerous due to the large number of dead standing trees as a result of Gypsy Moth devastation
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Minor damage incurred to the Township with minor power outages and Public Works employee overtime as a result of Sandy. The following Nor'Easter caused efforts in debris removal.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

Note Regarding Fire History:

Since forest fire is the major natural hazard threat to Tabernacle, a series of relevant conclusions can be drawn from a review of past fire history in the Township. Forest fires occur seasonally and primarily tend to occur between the beginning of April and the beginning of June but two of the largest fires recorded in Tabernacle Township began in July.

These are the periods when the moisture levels of the forest canopy tend to be lowest, the forest canopy is bare or just beginning to leaf out so the forest floor dries out quickly), ambient temperatures are elevated, humidity levels tend to be low, and winds tend to be gusty with cold front passages - characteristics that would serve to rapidly spread any fires that are ignited.

Acres Burned: Beginning in 1933 through the 1960's large wildfires (>100 acres) burned frequently in Tabernacle Township with at least 1 extremely large fire (>1000 acres) each decade. After 1968 large wildfires were more sporadic and smaller with the exception of the 1982 fire of 255 acres.

1. The 1920's saw 2 large wildfires that burned a total of 1,764 acres.
2. The 1930's saw 3 large wildfires that burned 4,082 acres.
3. The 1940's saw 2 large wildfires that burned 2,618 acres.
4. The 1954's saw 1 large wildfire that burned 20,788 acres.

5. 1980 had 1 large wildfire that burned 1,967 acres.

Ignition Frequency: The number of forest fires in Tabernacle of all sizes since 1954 have been steadily declining. This trend can generally be attributed to increased efforts to raise fire safety awareness. However, it should also be pointed out that almost all wildfires (estimates are as high as 99%) that occur within the project area, and elsewhere, are ignited as a result of human activity, underscoring the need for sustained education efforts. These fires may have been smaller in size but have threatened residences with the increased development in Tabernacle Township since the 1980's.

9.36.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Tabernacle.

Natural 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
Wildfire	(See page 9.36-3) Major Hazard in Tabernacle impacts all homes, farms and businesses potential for devastating loss Estimated Potential GBS Loss High to Extreme Risk \$748,543,000	Frequent	33	High
Winter Storm	Potential for losses in power and damage to houses and businesses. Damage to trees. At least one or two severe winter storms a year 1% of GBS: \$5,769,280 5% of GBS: \$28,846,400	Frequent	33	High
Severe Storms	Heavy rain and extreme winds that may or may not be related to a winter storm. Damage to trees will result in loss of power across the township. Loss of power relates to the loss of water to the residents of the town as all depend upon private wells for water 100-Year MRP: \$1,119,419 500-Year MRP: \$13,217,824 Annualized Loss: \$132,231	Frequent	30	Medium
Drought	Tabernacle resides on a large underground aquifer. Drought impacts upon the private wells of residents and the ability of farms to irrigate. Drought impacts the forested areas of the township increasing the potential for wild fires. Can occur at any time in the year with August the primary risk period.	Occasional	14	Medium
Flood	Excessive rain with damage due to winds. Tabernacle will have minor flooding with quick absorption 1% Annual Chance: \$8,835,000	Frequent	18	Medium
Earthquake	Might result in power loss due to falling trees and power poles. Minor threat 500-Year MRP: \$257,830 2,500-Year MRP: \$5,802,928 Annualized Loss: \$5,000	10 %	14	Low
Landslides	No threat	Rare	6	Low
Coastal Erosion	No threat	Rare	6	Low

Note

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- 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
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood and earthquake hazards represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.

9.36.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Tabernacle indicated that the municipality has high planning, regulatory, administrative, technical, and fiscal capability; high community resiliency and community political capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.36.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Tabernacle.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	annually			Construction Office	+	+	Dictated by state
2) Zoning Ordinance	X	annually				+	+	Pinelands Comprehensive Management Plan
3) Subdivision Ordinance	X							Part of Zoning Ordinance
4) NFIP Flood Damage Prevention Ordinance	N/A							Tabernacle is not within a flood plain
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management						+	+	Pinelands Comprehensive Management Plan
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	2007			Township Administrator	+	+	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
8) Master Plan	X	2012		Ordinance	Zoning Officer	+	+	
9) Capital Improvements Plan	X	Annual			Township Administrator	0		
10) Site Plan Review Requirements	X				Zoning Officer	+	+	
11) Open Space Plan	X			Township Master Plan				
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan		1999			Administrator			
15) Comprehensive Emergency Management Plan	X	2012		State Law	OEM Coordinator	+	+	
16) Emergency Response Plan	X							
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement					state	0		
20) Right-to-Know	yes	annually		State requirement	OEM Coordinator	+	+	

9.36.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Contract
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Contract
3) Planners or engineers with an understanding of natural hazards	Y	Contract
4) NFIP Floodplain Administrator	Y	Construction Code Official
5) Surveyor(s)	Y	Contract
6) Personnel skilled or trained in GIS applications	Y	Contract
7) Scientist familiar with natural hazards	Y	Contract
8) Emergency Manager	Y	Township Employee
9) Grant Writer(s)	Y	Administrator/OEM Coordinator
10) Staff with expertise or training in benefit/cost analysis	Y	Administrator/OEM Coordinator

9.36.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	N/A
5) Impact fees for homebuyers or developers of new development/homes	Limited
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	No
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	no
10) State mitigation grant programs	Yes
11) Other (recreation, OEM/FEMA)	Yes

9.36.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	N/A	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	N/A
Public Protection	ISO 4	2012
Storm Ready	N/A	N/A
Firewise	CWPP	April 2013

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Tabernacle's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.36.6 MITIGATION STRATEGY

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

9.36.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.36.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Ensure that local comprehensive plans incorporate natural disaster mitigation techniques by requiring a courtesy- review of draft plans by the County Emergency Management Agency.			X			The township continues to ensure that we address mitigation in our comprehensive and master plan.
Explore the need for hazard zoning and high-risk hazard land use ordinances.			X			The township will utilize this plan to identify high hazard land and determine the need to additional zoning as approved by the Pinelands Commission
Organize an annual event / fair for homeowners, builders and county and local jurisdictions that includes sale of NOAA weather radios, dissemination of information brochures about disasters and building retrofits, demonstration of "defensible-space" concept and fire resistant construction materials (for roofs/exterior finishes and inflammable coverings for openings like chimneys and attics) etc.				X		Tabernacle OEM supports and participates in the following community activities annually: Tabernacle Touch-a-Truck Tabernacle Volunteer Day Fire/EMS Open Houses Tabernacle Memorial Day Events
Develop a storm water management plan that includes subdivision regulations to control run-off; both for flood reduction and to minimize saturated soils on steep slopes that can cause landslides.				X		This plan has been developed and is on file in Township Engineers Office
Create a mitigation outreach program that helps residents prepare for disasters.				X		This outreach program was completed and information can still be obtained on Township webpage

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Publish and distribute pamphlets on water conservation techniques and drought management strategies.			X	X		This information is distributed to community in the month August on an annual basis
In consultation with NJFFS and local Forest Fire wardens, develop mapping of wildland/urban interface areas.				X		This map was developed in April, 2013 and is available from Twp. OEM
Develop inventory of addresses for route alerting during wildfire emergencies that require public warning and information.				X		This inventory was developed in April 2013 and is available from Twp. OEM
In consultation with NJFFS and local Forest Fire wardens, review local EOP's for possible wildfire components regarding Fire-Rescue, Alert Warning Communications, and Evacuation.				X		This project is complete and can be found in Tabernacle Emergency Operations Plan The local Forest Fire Warden is on the Tabernacle LEPC
Initiate a public outreach program for homeowners.			X	X		OEM Ready Tabernacle Preparedness Exercise 2013 Annual mailing from township administration
Community brush and debris removal and hazard fuels reduction.			X			Twice annually and as needed in emergencies
Firewise landscaping in higher risk areas.			X			CWPP (Community Wildfire Protection Plan)
Promote (or purchase, for critical facilities) NOAA weather radios					X	This initiative is discontinued due to funding.
Educate residents about driving in winter storms and handling winter-related health effects			X	X		The Reverse 911 system is utilized to advise residents about driving during winter storms

9.36.6.2 Hazard Vulnerabilities Identified

The Township noted hazard areas along the stream crossing at Bread and Cheese Run and the stream crossing at McKendum Creek.

In the Township of Tabernacle, an estimated 166 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 19% is located within the 1% annual chance flood area. A total of \$27,544,000 (3.0%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Tabernacle has a total of 18 NFIP policies, 7 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Tabernacle (T)	18	1	\$6,407	0	0	7	7	11

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾
Section B3 (17, 18, 29, 43)	Tabernacle Township	Fire	X	X	4.7	5.3	480

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps
HAZUS = Hazards United States
NA = Not available
T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.36.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
TB-1	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: - Provide and maintain links to mitigation and emergency planning website, and regularly post notices on the County/municipal homepage(s). - Prepare and distribute informational letters to property owners the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. - Use email notification systems and newsletters to better educate the public on hazards and mitigation strategies, and personal natural hazard risk reduction	N/A	All Hazards	3-2 5-1 5-2 5-3	Tabernacle OEM	Medium	Medium	Tabernacle Municipal Budget, Volunteer	Short Term	High	PE

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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
	measures.										
TB-2	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	1-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Tabernacle Municipal Budget, Volunteer	Short Term	Medium	ES PR
TB-3	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	1-4	Tabernacle with support from County OEM,, NJOEM, FEMA and surrounding communities	Medium	Low	Tabernacle Municipal Budget, Volunteer	Short Term	High	PR, ES
TB-4	Work with Burlington County OEM to help develop damage assessment capabilities at the local level to include training and certification programs (e.g. code officials, engineers and CERT).	N/A	All Hazards	1-1	Tabernacle OEM; Pinelands Regional CERT	Medium	Medium	Municipal Budget, FEMA HMA and HLS grant programs	Short-Long Term DOF	Medium	PR
TB-5	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New and Existing	All Hazards	1-4 4-2	Tabernacle with support from County OEM,, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
TB-6	Plan and carry out a community awareness day/event to educate and inform residents regarding hazard mitigation and preparedness	New and Existing	All Hazards	5-1 5-2 5-3	Tabernacle with support from County OEM,, NJOEM, FEMA	High	Low – High (for 5 year update)	Tabernacle Municipal Budget, Volunteer	Short Term	High	PE
TB-7	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program. "StormReady" program shall include providing information on the "StormReady" program, facilitating public outreach	N/A	Severe Storm	1-5 5-1 5-3	Tabernacle OEM, Public Works, Fire and EMS	Medium	Low	Tabernacle Municipal Budget, Volunteer	Short Term	Medium	PR

SECTION 9.36: TOWNSHIP OF TABERNACLE

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
	and awareness programs, and supporting community storm risk reduction activities as appropriate.										
TB-8	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 4-1	Tabernacle OEM	Medium	Low	Tabernacle Municipal Budget, Volunteer	Short Term	High	PR
TB-9	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption.	N/A	Severe Storm	1-1 1-5 2-1 3-1 4-1 5-1	Municipal Code Enforcement; Tabernacle OEM, Tabernacle Public Works	Medium	Low	Tabernacle Municipal Budget, Volunteer t	Short Term	High	PR
TB-10	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
TB-11	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
TB-12	Promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	PR
TB-13	Evaluate relocating or floodproofing critical facility Section B3 outside of a floodplain	Existing	Flood	1-1 1-2	Municipality with support from County, NJOEM and FEMA	High	High	Municipal Budget, FEMA HMA and HLS grant programs	Short Term	High	PP

Notes:

*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.

ARC American Red Cross
DPW Department of Public Works



FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
SCPD	Somerset County Planning Department
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater



OG = On-going program

DOF = Depending on funding

Notes:

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.36.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
TB-1	4	High	Low	Yes	Yes	Yes	High
TB-2	1	Medium	Low	Yes	Yes	Yes	High
TB-3	1	High	Low	Yes	Yes	Yes	High
TB-4	1	Medium	Low	Yes	No	Yes	Medium
TB-5	2	High	Low	Yes	Yes	Yes	High
TB-6	3	High	Medium	Yes	Yes	Yes	High
TB-7	3	Medium	Low	Yes	Yes	Yes	Medium
TB-8	2	High	Low	Yes	Yes	Yes	Medium
TB-9	6	High	Low	Yes	Yes	Yes	Medium
TB-10	7	Medium	Low	Yes	Yes	Yes	Medium
TB-11	3	Medium	Low	Yes	Yes	Yes	High
TB-12	2	Medium	Medium	Yes	Yes	Yes	Medium
TB-13	2	High	High	Yes	Yes	Yes	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.36.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.36.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Tabernacle has no additional risk vulnerabilities that need to be addressed at this time.

9.36.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Tabernacle is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Tabernacle has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.36-1: Tabernacle Flood Exposure Map

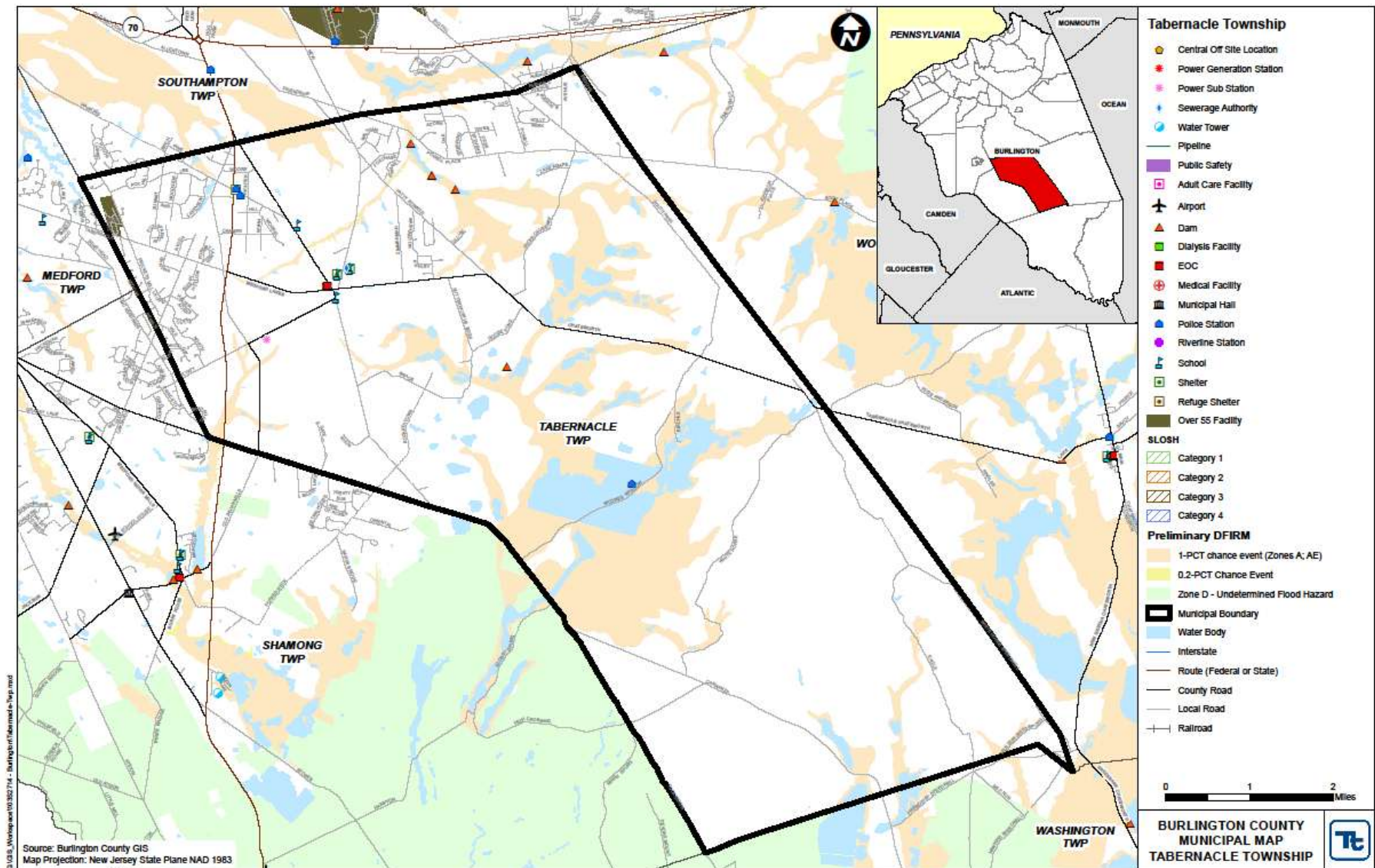
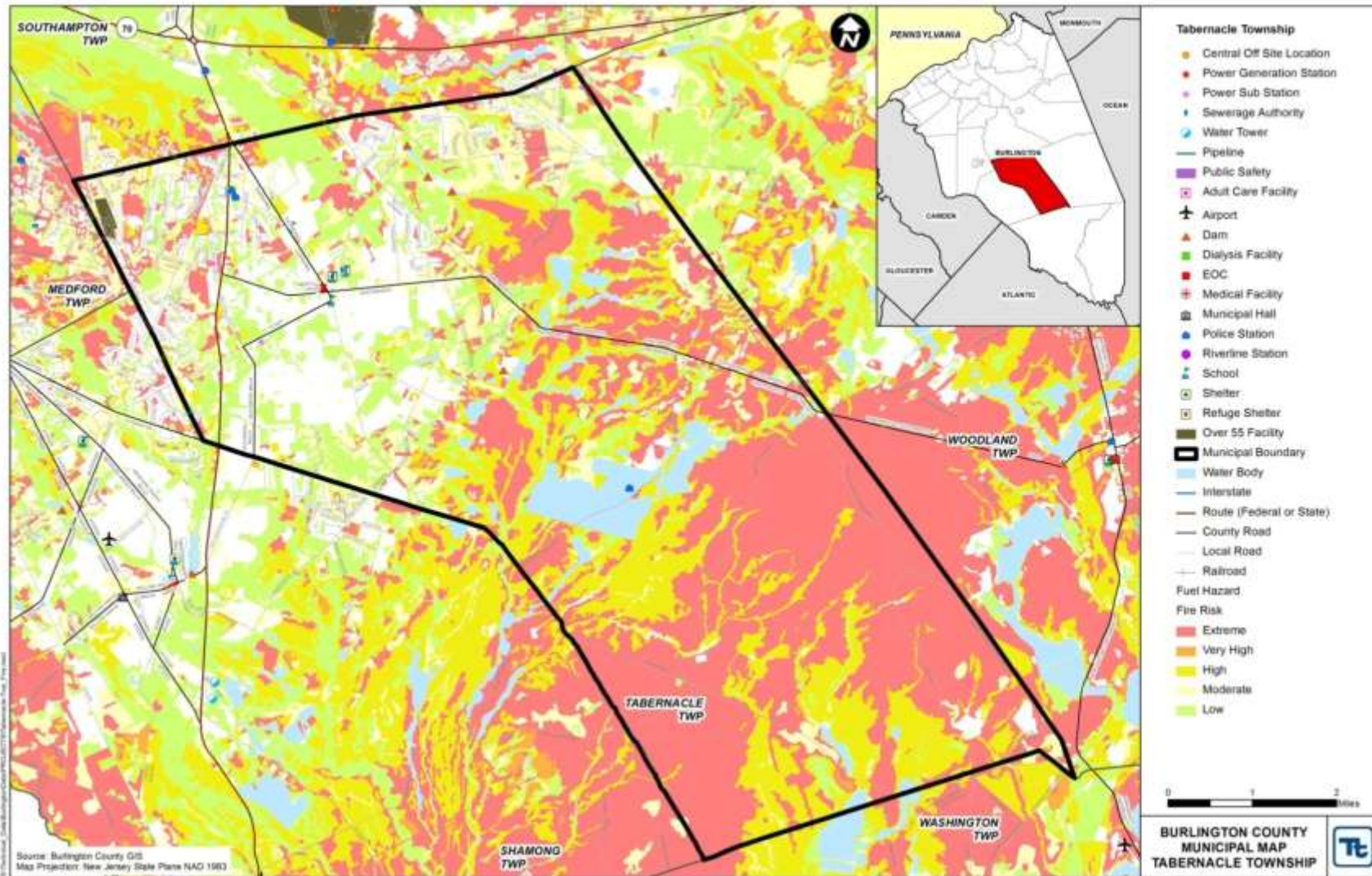


Figure 9.36-2: Tabernacle Wildfire Fuel Map



9.36.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Tabernacle to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.36.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.37 Township of Washington

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

9.37.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Barbara L. Somes Title: Emergency Management Coordinator Address: 2436 Route 563, Egg Harbor City, NJ 08215 Phone Number: (609) 965-2603 Fax Number: (609) 965-2603 E-mail Address: bsomes@wtbcnj.org	Name: Horace A. Somes, Jr. Title: Deputy Emergency Management Coordinator Address: 12 Turtle Creek Rd., Egg Harbor City, NJ 08215 Phone Number: (609) 965-2603 Fax Number: (609) 965-2603 E-mail Address: hsomes@wtbcnj.org

9.37.2 PROFILE

9.37.2.1 Population

The population of the Township of Washington is estimated to be 687, based on information gathered during the 2010 U.S. Census. The seasonal non-resident population of visitors to parks, campgrounds and Pinelands recreational open space is much larger.

9.37.2.2 Location

The Township of Washington is located in the southern portion of Burlington County. The Township is bordered by Bass River to the east, Woodland to the northeast, Tabernacle to the north, and Shamong to the north and northwest. In addition, the Township is bordered by Atlantic County to the south and west.

9.37.2.3 Brief History

What is now Washington Township was originally formed from Evesham, Little Egg Harbor, and Northampton townships in November of 1802. Portions of the Township were taken to form Shamong in 1852, Bass River in 1864, Woodland in 1866, and Randolph in 1870. Randolph was reannexed into the Township in 1893.¹ The small community area at Speedwell was recently transferred to Tabernacle Township.

9.37.2.4 Governing Body Format

Washington Township is governed under the Township form of government with a three-member Township Committee. The Township Committee is elected directly by the voters at-large in partisan elections to serve three-year terms of office on a staggered basis, with one seat coming up for election each year. [http://en.wikipedia.org/wiki/Washington_Township, Burlington County, New Jersey - cite note-DataBook-3](http://en.wikipedia.org/wiki/Washington_Township,_Burlington_County,_New_Jersey) The Township Committee selects one of its members to serve as Mayor at an annual reorganization meeting.²

¹ <http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

² <http://www.twp.mountholly.nj.us/content/386/557/default.aspx>

9.37.2.5 Growth/Development Trends

The Township of Washington did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality. The Township is situated within the Pineland Preservation Area pursuant to State's Pinelands Comprehensive Management Plan. The Township is currently approximately 85% in State ownership or other open-space preservation. The development of remaining private property is either severely limited or, in general, restricted thereby precluding future major development.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
None						

9.37.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	The Township experienced multiple road closures due to flooding, including River Road and Routes 652,563, and 542.
Fire	FM-2695	Yes	May 15-19, 2007	None
Fire	N/A	No	August 3, 2007	This event caused the closure and evacuation of the Astion Lake Recreation Area, Mullica River, and Lower Forge Wilderness. In addition, the event delayed the opening of local schools during hazardous smoke/traffic conditions on the second day of the event. State Route 206 was closed during fire suppression operations.
Winter Storm	DR-1873	Yes	December 19- 20, 2009	The Township required on call duties for employees and equipment for snow removal.
Winter Storm	DR-1889	Yes	February 5-6, 2010	The Township experience power outage as a result of this event.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	The Township experienced multiple road closures due to flooding, including River Road and Routes 652,563, and 542.

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Winter Storm	DR-1954	Yes	December 26-27, 2010	The Township cleared and sanded roads to allow for the health and safety of residents.
Fire	N/A	No	June 9, 2011	This event caused the closing of the Lower Forge Camping Area of the Wharton State Forest.
Fire	N/A	No	June 27, 2011	None
High Winds	N/A	No	July 24, 2011	This event caused road closures due to downed trees and wires. The Township experienced utility outages and the Pine Island Cranberry Company suffered \$2.5 M in damages to company structure and crops.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	The Township initiated sheltering for residents to protect life safety. In addition, the Township experienced flooding and power outages. Batsto and Pleasant Mills Bridges/Route 542 were damaged. The Township also incurred costs for debris removal.
High Winds	N/A	No	July 1, 2012	The Township experienced power outages due to downed trees and wires.
Flooding	N/A	No	September 2012	The Evans Bridge/Route 563 sustained damage. In addition, roads were closed due to flooding as a result of this event. The Pine Island Cranberry Company sustained damage to agricultural infrastructure and crops.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	The Township initiated evacuation and sheltering for residents to protect life safety. In addition, the Township experienced flooding and downed trees and wires. Multiple businesses were closed, as well as closures to state forest and parks.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.37.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Washington.

Natural 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
Flood	1% Annual Chance: \$3,812,000	Frequent	42	High
Severe Storm	100-Year MRP: \$55,433 500-Year MRP: \$1,224,191 Annualized Loss: \$12,122	Frequent	48	High
Severe Winter Storm	1% of GBS: \$633,800 5% of GBS: \$3,169,000	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme \$107,765,000 Risk	Frequent	54	High
Drought ^g	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$31,192 2,500-Year MRP: \$665,716 Annualized Loss: \$592	Rare	6	Medium
Landslides	Not available	Rare	6	Low

Note

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- 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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.
- d. Loss estimates are structural values only; does not include the value of contents.
- e. Loss estimates represent both structure and contents.
- f. The HAZUS-MH earthquake model results are reported by Census Tract.
- g. Client input noted that a non-structural economic impact would be incurred by the cranberry/blueberry agribusiness.

9.37.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Washington indicated that the municipality has limited planning, regulatory, administrative, technical, and fiscal capability; moderate community resiliency and community political capability; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.37.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Washington.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	2010		State of NJ Uniform Construction Code	NJDCA/BLCE	+	+	
2) Zoning Ordinance	X	2012		Twp. Code 275	Zoning Officer	+	+	Land Development Ordinance
3) Subdivision Ordinance	X	1983		Twp. Code chpt.. 275.55	Planning Board	0	0	
4) NFIP Flood Damage Prevention Ordinance	X	1988		Twp. Code chpt.. 236	Township Engineer	+	+	Amendment under development per FEMA/NJDEP guidelines
4a) Cumulative Substantial Damages	X			Twp. Code chpt.. 236	Township Engineer	+	+	Amendment under development per FEMA/NJDEP guidelines
4b) Freeboard	X			Twp. Code chpt. 236	Township Engineer	+	+	Amendment under development per FEMA/NJDEP guidelines
5) Growth Management	X	2007		Twp. Master Plan	Planning Board	+	+	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
6) Floodplain Management / Basin Plan	X	1983		Twp. Code ch 275.88	Planning Board	+	+	Amendment under development per FEMA/NJDEP guidelines
7) Stormwater Management Plan/Ordinance	X	2007		Twp. Code ch. 407	Planning Board/Twp. Engineer	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X	2007		Twp. Master Plan	Planning Board	+	+	
9) Capital Improvements Plan	X	2013		Twp. Budget	Twp. Committee	+	+	
10) Site Plan Review Requirements	X	1983		Twp. Code chpt. 275	Planning Board	+	+	
11) Open Space Plan	N/A							
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X	2010		EOP	LEPC	+	+	Update/recertification pending in 2014
16) Emergency Response Plan	X	2010		EOP	LEPC	+	+	Update/recertification pending in 2014
17) Post Disaster Recovery Plan	X	2010		EOP	LEPC	+	+	Update/recertification pending in 2014



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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
18) Post Disaster Recovery Ordinance	X	2013		EOP	LEPC	+	+	Update/recertification pending in 2014
19) Real Estate Disclosure Requirement	X	2013		SNJ DCA	Municipal Clerk	O	O	Financial disclosure form for local officials
20) Campground	X	2012		Twp. Code chpt. 155	Twp. Committee/ Code Enforcement	+	+	Licensing ordinance
21) Junkyard	X	2012		Chpt. 269	Twp. Committee/ Code Enforcement	+	+	Licensing ordinance
22) Parade/Similar Assemblies	X	1992		Chpt. 322	Twp. Committee/ Code Enforcement	+	+	Licensing ordinance
23) Naming Streets/Numbering Buildings	X	1993		Chpt. 303	OEM	+	+	911 locatable addressing

9.37.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Planning and Zoning Board, Twp. Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Twp Engineer, Construction Code Official
3) Planners or engineers with an understanding of natural hazards	Y	Planning and Zoning Board, Twp. Engineer
4) NFIP Floodplain Administrator	Y	Twp. Engineer
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	Y	Local Emergency Management Planning Council
7) Scientist familiar with natural hazards	Y	LEPC Deputy Coordinator
8) Emergency Manager	Y	LEPC Coordinators
9) Grant Writer(s)	Y	Twp. Engineer, LEPC Coordinators
10) Staff with expertise or training in benefit/cost analysis	Y	Chief Financial Officer

9.37.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	Yes
10) State mitigation grant programs	Yes
11) Other (license/permit fees for campgrounds, mobile homes, parade/recreational events, junkyard)	Yes

9.37.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	Community Wildfire Protection Plan	Nov. 2011

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Washington's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.37.6 MITIGATION STRATEGY

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

9.37.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.37.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Establish Primary EOC in New Municipal Building/former school				X		Basic Functions Completed January 2012
Develop EOC facility for OEM Administrative Office		X				Continuing development/improvement of telephone lines and audio-visual equipment
Emergency communications base station radio and antenna				X		Relocated from ambulance station 459 To Municipal Building/EOC January 2012
Computer/GIS Technology			X			Continuing development/improvement Of record-keeping, mapping and reverse 9-1-1
Emergency electrical power for EOC		X				Generator budgeted for 2013/14
Hazard Mitigation Plan				X		2012 updated local HMP
Reduce possibility of damage and loss from wildfires				X		Community Wildfire Protection Plan (Nov. 2011)

9.37.6.2 Hazard Vulnerabilities Identified

Washington Township officials noted that the Township is particularly susceptible to coastal storms, flooding, high winds, and wildfires.

Due to the heavily wooded area within Washington Township, wildfire is of particular concern to the community. The following figure illustrates the potential for wildfire in the Township.

In the Township of Washington, an estimated 348 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 21% is located within the 1% annual chance flood area. A total of \$29,667,000 (27.3%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Washington has a total of 45 NFIP policies, 23 of which are located within the 1% annual chance flood area. FEMA has identified 1 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) Properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Washington (T)	45	22	\$697,601	1	0	23	41	4

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
NJ State Park Service Southern	Washington (T)	Police		X			
Municipal Building	Washington (T)	Municipal		X			

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)
- X = Facility located within the DFIRM boundary.
- (1) = HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore, this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).
- DFIRM = Digital Flood Insurance Rate Maps
- HAZUS = Hazards United States
- NA = Not available
- T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.37.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
WA-1	Install auxiliary electrical generator for emergency power at Municipal Building/EOC	Existing	All	1-2 3-2	Lead: Twp. Committee Support: Twp. OEM	High	Low (~\$5K)	Municipal Budget	Short	High	SP
WA-2	Update telephone system to the municipal building, including facilities for the EOC and emergency back-up during utility outages (either electrical or phone)	Existing	All	1-1	Lead: Twp. Committee Support: Twp. OEM	High	Low	Municipal Budget	Short	Medium	SP
WA-3	Acquire 4WD pickup as a utility vehicle for municipal ground support and emergency services.	N/A	All	3-2	Lead: Twp. Committee Support: Twp. OEM	High	Medium	Municipal budget	Short	High	ES
WA-4	Acquire map filing cabinet for storage, organization, and protection of OEM mapping	Existing	All	2-2	Lead: Twp OEM Support: Twp Committee	Medium	Low	Municipal Budget	Short	Medium	PP
WA-5	Acquire GIS mapping program for installation on laptops of OEM and local response agencies, including USGS topography and aerial imagery.	N/A	All	4-1	Lead: Twp. OEM Support: Twp. Committee	Medium	Low	NJ Forest Fire Service grant funding with local match	Short	Low	ES
WA-6	Cooperate with BC Central Communications, OEM-GIS and State Park Service in GIS mapping for waterway access points for emergency dispatching and response to recreational inland streams and tidal waterways.	N/A	Fire Flood	4-1	Lead: BC Central, State Park Service Support: Twp & BC OEM, local Fire Companies	Medium	Low	BC Public Safety, State Park Service and Municipal Budget	Short	Medium	ES

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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
WA-7	Incorporate cross-references to available State Forestry fuel-cover hazard classification and updated FEMA flood-hazard mapping (when available) into municipal zoning/land capability mapping as reference document for land development ordinances	Existing	Fire	1-4 4-1	Lead: Planning and Zoning Board Support: Twp. OEM and Twp. Engineer	Medium	Low	NJ Forest Fire Service grant funding with local match	Short	Low	PR
WA-8	Incorporate emergency contact numbers into the Global Connect system of County OEM for reverse 911 warning for high-hazard community areas	N/A	Fire Flood	1-5 5-1	Lead: Twp. OEM and Clerk Support: BCOEM	High	Low	Municipal Budget and County OEM	Short	Medium	ES
WA-9	Develop Global Connect sub-system for reverse 911 alerting to local emergency personnel	N/A	All	3-1	Lead: Twp. OEM Support: Local Fire Companies, Ambulance squads, County OEM, and County Central Communications	High	Low	Municipal Budget and County OEM	Short	High	ES
WA-10	Update the standard operating guidelines/school safety plan for Green Bank School during emergency situations and as the residential public shelter within the municipality	Existing	All	1-1 1-5	Lead: Board of Education Support: Twp OEM	High	Low	Board of Education	Short	Medium	PR
WA-11	Inspect and review the impacts of rising sea levels/shoreline erosion and flood risk on River Road-Lower Bank bridge and between western landing and eastern cul-de-sac, either directly or indirectly through effects on privately-owned riverside lots	Existing	Flood	4-1	Lead: Twp. OEM, Twp. Engineer, County Engineer/Highway Support: Twp. Committee, Twp. Road Dept.	High	Medium	Municipal Budget and County Highway	Short	High	PP
WA-12	Amend Twp. Code	N/A	Flood	1-4	Lead: Twp.	High	Low	Municipal	Short	High	PR



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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
	Ordinance chapter 236 – Flood Damage Prevention and adopt updated flood-hazard maps (pending FEMA issuance) based upon updated requirements and guidelines of FEMA and NJDEP				Committee, Twp. Engineer/Floodplain Administrator Support: Planning and Zoning Board			Budget			
WA-13	Participate in the Installation Complex Encroachment Management Action Plan (ICEMAP) of the US Air Force/NJ Air National Guard/177 th for the Warren Grove Target Range and Coyle Field Drop Zone	N/A	Fire	1-1	Lead: USAF and Twp. OEM Support: Local fire companies and ambulance squad, NJ Forest Fire Service	Low	Low	USAF	Short	Low	ES
WA-14	Provide planning and zoning, engineering and construction code support to local residents, businesses and improved property owners for mitigation in flood hazard areas, including structural modification, elevation, flood-proofing and/or relocation	Existing	Flood	1-5 2-1	Lead: Twp. Engineer/Floodplain Administrator, Zoning Official, Construction Code Official	High	Medium	Municipal Budget	Long	Medium	PR
WA-15	Update Community Forest Management Plan	N/A	Fire	2-1 3-1	Lead: Twp. OEM/Community Forestry Committee Support: Twp. Road Dept./Public Works, Green Bank School District, Twp. Fire companies and ambulance squad, NJ Forest Fire Service, State Park Service, State Forestry Service	Medium	Low	DOF: State Forestry Service grant funding with local match	Short	Low	PR
WA-16	Update Community Wildfire Protection Plan	N/A	Fire	2-1 3-1	Lead: Twp. OEM/Local	Medium	Low	DOF: State Forestry	Long	Low	PR

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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
					Emergency Planning Council Support: Twp. Fire companies, NJ Forest Fire Service, Community Forestry Committee			Service grant funding with local match			
WA-17	Remove hazardous trees from the facilities and roads around the Green Bank Municipal Complex and Bulltown Road	N/A	All	3-1	Lead: Twp. OEM/Community Forestry Committee Support: Green Bank School District, Green Bank Fire Co 451, Green Bank Ambulance Squad 459, NJ State Forestry Service, NJ Forest Fire Service, State Park Service	High	Medium	DOF: State Forestry Services CSIP grant funding with local match	Long	High	PP
WA-18	Perform maintenance of Godfrey Bridge Road Cul-de-sac turn-around	Existing	Fire Flood	1-2	Lead: Twp. Twp. Engineer, OEM Support: NJ Forest Fire Service	Medium	Low	NJ Forest Fire Service CWPP grant funding with local match	Short	Low	SP
WA-19	Conduct Firewise/ICS Training Exercise – “Great Swamp WUI” Incident Simulation	N/A	Fire	5-1	Lead: Twp. OEM, local fire companies and NJ Forest Fire Service Support: NJ State Police, State Park Police, BCOEM, Bass River Twp. OEM	High	Low	NJ Forest Fire Service Firewise grant with local match	Short	Medium	ES
WA-20	Develop flood response at inter-county bridges and approaches over Mullica River at Lower Bank and Green Bank	Existing	Flood	2-1 3-1	Lead: Washington Twp. OEM, BCOEM and Hwy Support:, ACOEM, NJSP	High	Low	Municipal Budget and County Highway	Short	High	PR
WA-21	Develop flood response	Existing	Flood	3-1	Lead: Washington	High	Low	Municipal	Short	High	PR



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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
	involving Bass River Twp the inter-municipal bridge over Wading River at Wading River and approach bridge over Merrygold Creek in Bass River Township				Twp. OEM, BCOEM and Hwy Support: Bass River Twp. OEM, NJSP			Budget and County Highway			
WA-22	Address flood hazard and drainage situation on Route 652/River Road in the vicinity of the Lower Bank landing involving the adjacent ditching/culvert/former tidegate in the County right-of-way	N/A	Flood	1-3 3-1	Lead: Washington Twp. OEM and Road Dept, BC Hwy Support: BCOEM Department	High	Low	Municipal Budget and County Highway	Short	High	NR
WA-23	Address flood hazard on Route 542/Crowleys Landing at MM 10 and develop alternate detour for evacuation of Bulltown Road/Batsto Road.	N/A	Flood	3-1	Lead: BC Hwy Dept and Washington Twp. OEM, BCOEM Support: NJSP	High	Low	Municipal Budget and County Highway	Short	High	PR
WA-24	Continue enhancement of Bulltown Road as a strategic fuelbreak for WUI protection and as an alternate evacuation route detour	N/A	Fire	3-1	Lead: Washington Twp. OEM, and Road Dept BCOEM Support: State Park Service, NJ Forest Fire 2Service, Atlantic Electric	High	Low	NJ Forestry Services grant and local match	Long	High	PR
WA-25	Coordinate and plan for flooding response/water release for dams – Batsto River and Oswego River	Existing	Flood	3-1	Lead: NJDEP, State Park Service Support: Washington OEM, BCOEM	Medium	Low	NJDEP	Short	Medium	PR
WA-26	Develop management plan for maintenance of key access roads – Wharton and Penn State Forests, and Swan Bay Wildlife management area	N/A	Flood	3-1	Lead: State Parks, Wildlife and Forest Fire Services Support: Washington OEM, BCOEM	Medium	Medium	NJDEP	Long	Medium	PR
WA-27	Cooperate in RISK mapping for Burlington	N/A	Flood	4-1	Lead: FEMA and BCOEM	Medium	Low	BCOEM	DOF	Low	PR

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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
	County				Support: Twp OEM						
WA-28	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Low	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
WA-29	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
WA-30	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low	Municipal Budget, FEMA planning grants	On-going DOF	High	PR
WA-31	Promote the participation of Floodplain Administrators within the planning process and other activities.	N/A	Flood	1-4 4-2	Township Engineer with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget, Application Escrows	Short	High	PR
WA-32	Enhance the County/community resilience to severe storms (incl. coastal/winter storms) by joining the NOAA "Storm Ready" program	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
WA-33	Provide public education and outreach on proper installation and/or use of backup power	Existing and New	Severe Storm	1-5 5-1 5-3	Township OEM, NJDCA Construction Official	Medium	Low	Municipal Budget	Short	High	PR
WA-34	Support the mitigation of vulnerable structures via elevation to protect structures from future damage with repetitive	Existing	Flood, Severe Storm	1-1 2-1 2-2	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with	High	High	FEMA Mitigation Grants	Long Term DOF	Medium	PP

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
	loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates based on cost-effectiveness and repetitive loss. Phase 2: Work with the property owners to implement action based on available funding from the State and FEMA and local match availability.				support from County Planning, NJOEM, FEMA						

Notes:

*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:

ARC	American Red Cross
ACOEM	Atlantic County Office of Emergency Management
BCOEM	Burlington County Office of Emergency Management
DEP	Department of Environmental Protection
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

3. PE = Public Education and Awareness: 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.

4. NR = Natural Resource Protection: 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.

5. SP = Structural Projects: 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.

6. ES = Emergency Services: 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.

9.37.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WA-1	2	High	Low	Yes	Yes	Yes	High
WA-2	1	High	Low	Yes	Yes	Yes	Medium
WA-3	1	High	Medium	Yes	Yes	Yes	High
WA-4	1	Medium	Low	Yes	Yes	Yes	Medium
WA-5	1	Medium	Low	Yes	No	No	Low
WA-6	1	Medium	Low	Yes	No	Yes	Medium
WA-7	2	Medium	Low	Yes	No	No	Low
WA-8	2	High	Low	Yes	No	No	Medium
WA-9	1	High	Low	Yes	No	No	High
WA-10	2	High	Low	Yes	Yes	Yes	Medium
WA-11	1	High	Medium	Yes	No	No	High
WA-12	1	High	Low	Yes	Yes	Yes	High
WA-13	1	Low	Low	Yes	No	No	Low
WA-14	2	High	Medium	Yes	Yes	Yes	Medium
WA-15	2	Medium	Low	Yes	No	No	Low
WA-16	2	Medium	Low	Yes	No	No	Low
WA-17	1	High	Medium	Yes	No	No	High
WA-18	1	Medium	Low	Yes	No	No	Low
WA-19	1	High	Low	Yes	No	Yes	Medium
WA-20	2	High	Low	Yes	No	No	High
WA-21	1	High	Low	Yes	No	No	High
WA-22	2	High	Low	Yes	No	No	High
WA-23	1	High	Low	Yes	No	No	High
WA-24	1	High	Low	Yes	No	No	High
WA-25	1	Medium	Low	Yes	No	No	Medium
WA-26	1	Medium	Medium	Yes	No	No	Medium
WA-27	1	Medium	Low	Yes	No	No	Low
WA-28	3	Medium	Low	Yes	Yes	Yes	High
WA-29	1	Medium	Low	Yes	Yes	Yes	High

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Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WA-30	1	High	Low	Yes	No	No	High
WA-31	2	Medium	Low	Yes	Yes	Yes	High
WA-32	3	Medium	Low	Yes	Yes	Yes	Medium
WA-33	3	Medium	Low	Yes	Yes	Yes	High
WA-34	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.37.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.37.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Washington has no additional risk vulnerabilities that need to be addressed at this time.

9.37.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Washington is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Washington has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.37-1: Washington Flood Exposure Map

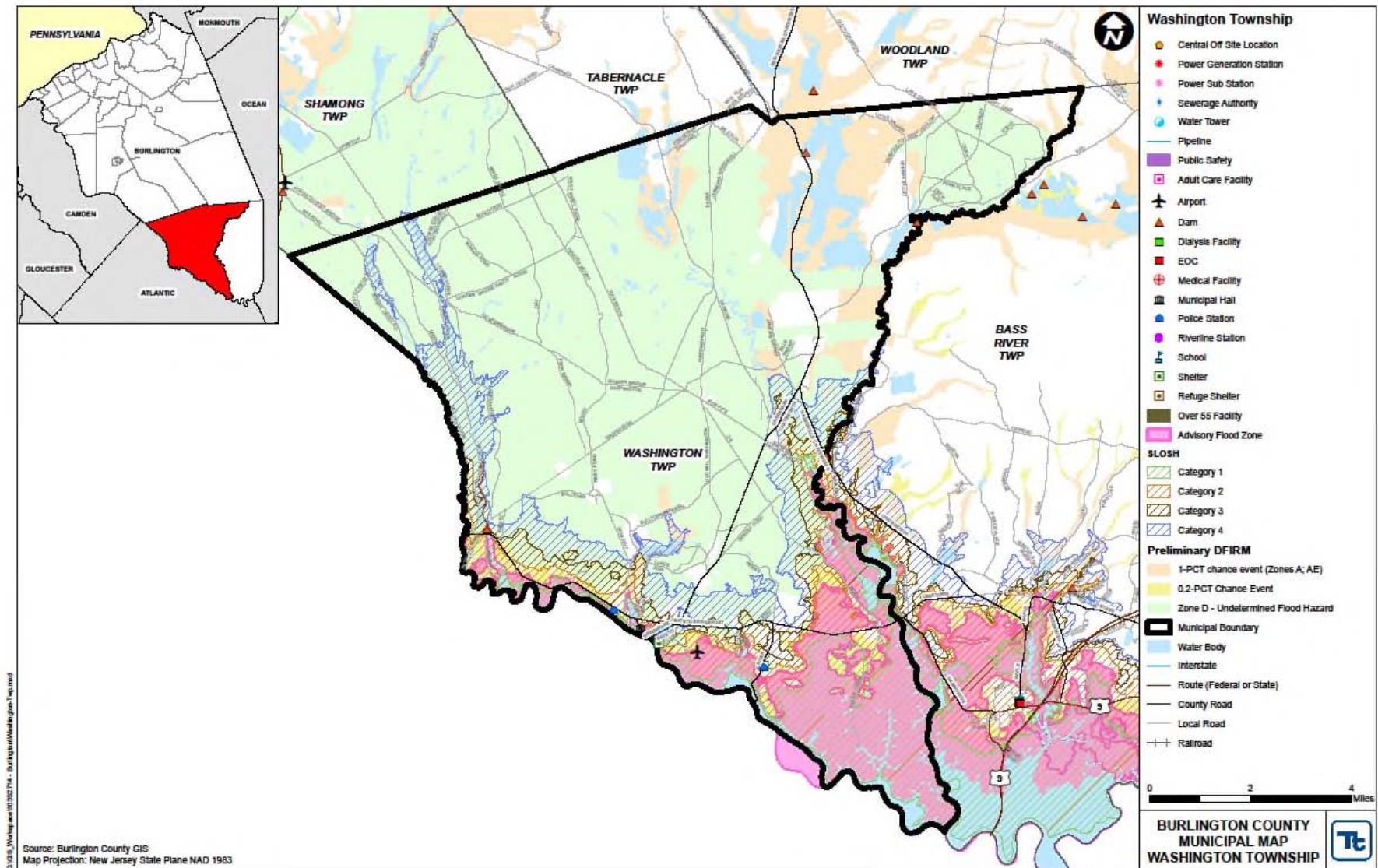
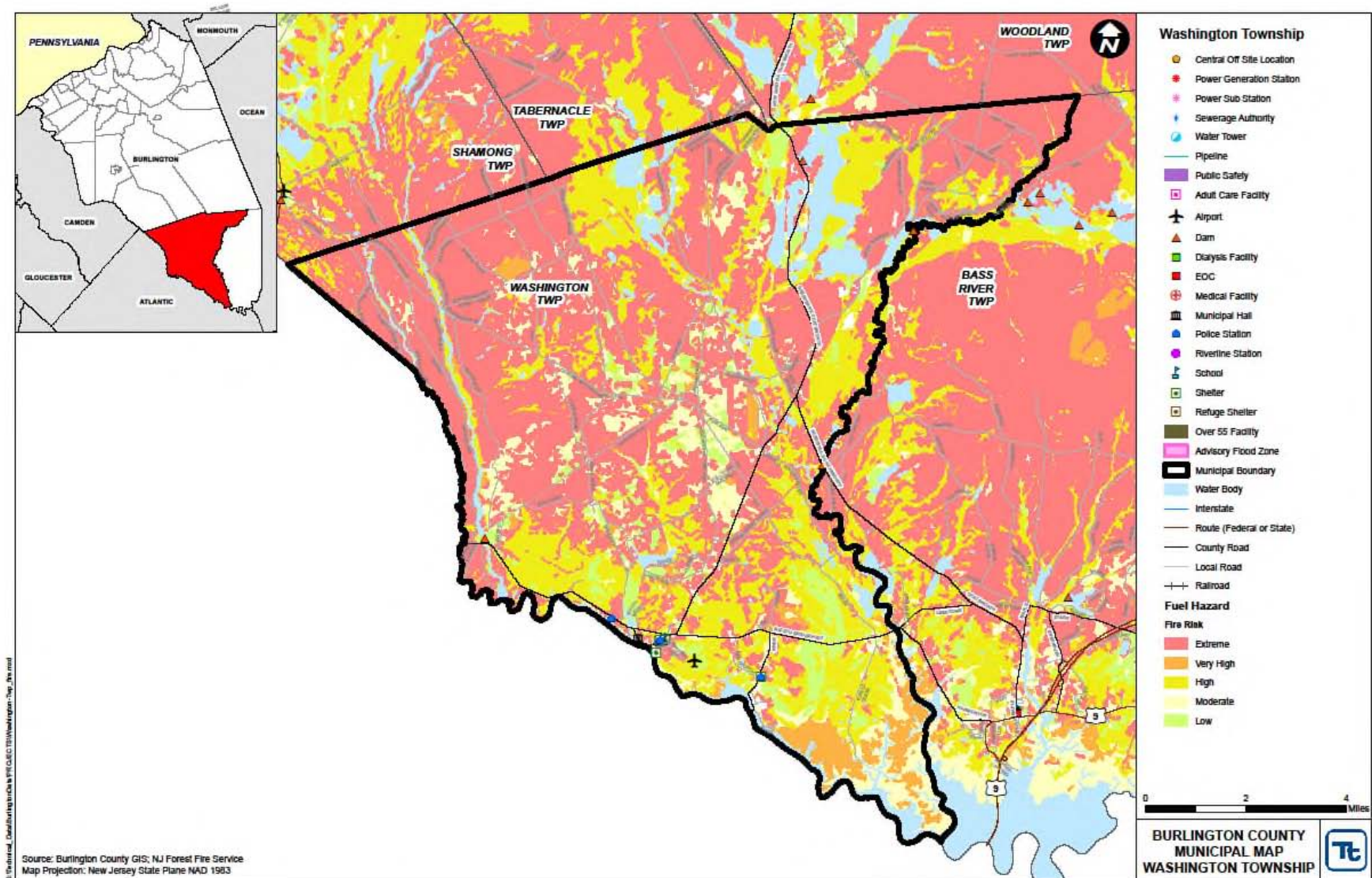


Figure 9.37-2: Washington Wildfire Fuel Map



9.37.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Washington to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.37.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.38 Township of Westampton

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

9.38.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Daryl Caulfield Title: Police Officer/OEM Coordinator Address: 710 Rancocas Rd., Westampton, NJ 08060 Phone Number: (609) 267-3004 Ext. 458 Fax Number: (609) 261-7551 E-mail Address: Caulfield@wtpd.us	Name: Donna Ryan Address: 710 Rancocas Road, Westampton, NJ 0860 Phone Number: (609) 267-1846 x 105 Fax Number: (609) 261-7551 E-mail Address: dryan@westampton.com

9.38.2 PROFILE

9.38.2.1 Population

The population of the Township of Westampton is estimated to be 8,813, based on information gathered during the 2010 U.S. Census.

9.38.2.2 Location

The Township of Westampton is centrally located in the northern portion of Burlington County. The Township is bordered by Mouth Holly and Hainesport to the south, Mount Laurel to the southwest, Willingsboro to the west, Burlington Township to the north, Springfield to the east, and Eastampton to the southeast.

9.38.2.3 Brief History

Westampton was incorporated as a township by an Act of the New Jersey Legislature on March 6, 1850, from portions of Northampton Township (now known as Mount Holly Township). Portions of the township were taken to form Eastampton Township on February 11, 1880.¹

9.38.2.4 GOVERNING BODY FORMAT

The Township of Westampton is governed under the Township form of government. Under this form, Westampton is governed by five Council members, each of whom is elected for a four-year staggered term. At the beginning of each year, the Council members elect one of their members to serve as Mayor and one as Deputy Mayor for that year.²

¹ <http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

² http://www.njslom.org/magart0307_p14.html

9.38.2.5 Growth/Development Trends

The Township of Westampton did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
None						

9.38.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-20, 2009	The Township experienced road closures, utility outages, and commercial closures as a result of this event. In addition, the Township was responsible for snow removal.
Winter Storm	DR-1889	Yes	February 5- 6, 2010	The Township experienced road closures, utility outages, and commercial closures as a result of this event. In addition, the Township was responsible for snow removal.
Severe Storms, Flooding	DR-1897	Yes	March 12- April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	The Township experienced road closures, utility outages, and commercial closures as a result of this event. In addition, the Township was responsible for snow removal.
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26- September 5, 2011	The Township experienced road closures, utility outages, and commercial closures as a result of this event. In addition, the Township was responsible for debris removal
Hurricane Sandy	DR-4086	Yes	October	The Township experienced road closures, utility

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			26-November 8, 2012	outages, and commercial closures as a result of this event. In addition, the Township was responsible for debris removal.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

PA = Public Assistance is eligible for the declaration.

9.38.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Westampton.

Natural 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
Flood	1% Annual Chance: \$9,302,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,584,986 500-Year MRP: \$8,054,625 Annualized Loss: \$117,578	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$7,698,540 5% of GBS: \$38,492,700	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$649,447,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$530,753 2,500-Year MRP: \$12,342,800 Annualized Loss: \$11,500	Rare	6	Medium
Landslides	Not available	Rare	6	Low

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.38.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Westampton indicated that the municipality has high planning, regulatory, administrative, technical, and fiscal capability; high community resiliency and community political capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.38.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Westampton.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop- ment					
1) Building Code	x	12/14/71		Chapter 99				
2) Zoning Ordinance	x	8/10/87		Chapter 250		+	N / A	
3) Subdivision Ordinance	x	6/22/54		Chapter 215		+	N / A	
4) NFIP Flood Damage Prevention Ordinance	N/A							
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	X	2/12/80		Chapter 131		+	N / A	
7) Stormwater Management Plan/Ordinance	x			Chapter 209		+	N / A	
8) Comprehensive Plan / Master Plan/ General Plan	x	11/10/98 6/13/00 6/13/00		Code 131-19 Code 250-4 Code 250-22		+	N / A	
9) Capital Improvements Plan	x	2/28/74		Code 215-14		+	N / A	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Develop -ment					
10) Site Plan Review Requirements	x	3/26/81		Chapter 196		+	N / A	
11) Open Space Plan	x	8/10/87		Chapter 250		+	N / A	
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	X	8/23/94		Chapter 32		+	N / A	
15) Comprehensive Emergency Management Plan	X	8/2009		EOP		+	N / A	
16) Emergency Response Plan	X	8/2009		EOP		+	N / A	
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	X	12/15/06		Chapter 250, Attach. 5		+		
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.38.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Township Planning Board and Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Township Engineer / Construction Official
3) Planners or engineers with an understanding of natural hazards	Y	Township Planning Board and Engineer
4) NFIP Floodplain Administrator	Y	Construction Official
5) Surveyor(s)	Y	Township Engineer
6) Personnel skilled or trained in GIS applications	Y	Township Engineer
7) Scientist familiar with natural hazards	N	None
8) Emergency Manager	Y	Emergency Management Coordinator
9) Grant Writer(s)	N	None
10) Staff with expertise or training in benefit/cost analysis	Y	CFO Bob Hudnell

9.38.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	No
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	Don't Know
10) State mitigation grant programs	Yes
11) Other	None

9.38.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	Unavailable	
Public Protection	Unavailable	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Westampton's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.38.6 MITIGATION STRATEGY

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

9.38.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.38.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Mitigation for roads that provide key Emergency Services access			X			Roadways are surveyed annually regarding emergency service access
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood-proof those properties.	X					Budget and personnel restraints have prevented any progress on this initiative.
Rebuild drainage along Dale Road to mitigate flooding conditions			X			Budget and personnel issues have slowed this action.
Main Street in Village of Rancocas – Install three additional storm drains to improve storm water management			X			Budget and personnel issues have slowed this action.

9.38.6.2 Hazard Vulnerabilities Identified

Township officials noted that minor flooding occurs along the Rancocas Creek, affecting six homes.

In the Township of Westampton, an estimated 487 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 14% is located within the 1% annual chance flood area. A total of \$50,733,000 (3.8%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Westampton has a total of 29 NFIP policies, 11 of which are located within the 1% annual chance flood area. FEMA has identified 2 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Westampton (T)	29	13	\$165,778	2	0	11	13	16

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM =

HAZUS =
NA = Not available
T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.38.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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	Initiation Category
WA-1	Obtain and install backup power sources at all critical facilities to include shelters and in the municipal building (EOC)	Yes	All	1-2 1-5 3-2	Westampton Township OEM Coordinator and Municipality	High	High	HMGP PDM	Short Term (DOF)	High	SP
WA-2	Conduct Public Outreach / Education in storm preparedness and notification procedures	N/A	All	1-1 5-1 5-3	Westampton Township OEM Coordinator and Municipality	Medium	Medium	FEMA / Township Committee	Short Term	Medium	PE
WA-3	Evaluate and rebuild drainage along Dale Road to mitigate flooding conditions	N/A	Flood	2-1 3-1	Westampton Township Engineer and DPW	Medium	Medium	Township DPW	Long Term (DOF)	Medium	PP
WA-4	Install three additional storm drains to improve storm water management on Main Street	N/A	Flood	2-1 3-1	Westampton Township Engineer and DPW	Medium	Medium	Township DPW	Long Term (DOF)	Medium	PP
WA-5	Evaluate and rebuild drainage along David Street to mitigate flooding conditions	N/A	Flood	2-1 3-1	Westampton Township Engineer and DPW	High	High	Township DPW	Long Term (DOF)	Medium	PP
WA-6	Evaluate and rebuild drainage along Rancocas Road to mitigate flooding conditions	N/A	Flood	2-1 3-1	NJ DOT County Hwy Dept.	High	High	NJ DOT County Hwy Dept. Municipal DPW	Long Term (DOF)	Medium	PP
WA-7	Evaluate and rebuild drainage along CR 541 to mitigate flooding conditions	N/A	Flood	2-1 3-1	NJ DOT County Hwy Dept.	High	High	NJ DOT County Hwy Dept. Municipal DPW	Long Term (DOF)	Medium	PP
WA-8	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include disaster preparedness and hazard	N/A	All Hazards	5-1 5-2 5-3	Municipality, PPP, County OEM, NJOEM and FEMA	Medium	Medium	Municipal Budget, HMA programs with local and county support	Short Term	High	PE

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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	Initiation Category
	mitigation										
WA-9	Continue to support the implementation, monitoring, maintenance, and updating of this plan through participation in the five year plan update.	New and Existing	All Hazards	1-4	Westampton Township Municipal Government, OEM Coordinator, County OEM, NJOEM and FEMA	High	Low-High (five- year update)	Municipal Budget, County/State/FEMA grants	On-Going	High	PR
WA-10	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies	N/A	Severe Storm/Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	Short Term	Medium	PR
WA-11	Support the mitigation of vulnerable structures via retrofit (eg. Elevation, flood-proofing) or relocation to protect structures from future damage with repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates based on cost-effectiveness and repetitive loss. Phase 2: Work with the property owners to implement selected action based on available funding from the State and FEMA and local match availability.	Existing	Flood, Severe Storm	1-1 2-1 2-2	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from County Planning, NJOEM, FEMA	High	High	FEMA Mitigation Grants	Long Term DOF	Medium	PP

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance



HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding



Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.38.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WA-1	3	High	High	Yes	Yes	No	High
WA-2	3	Medium	Medium	Yes	Yes	No	Medium
WA-3	2	Medium	Medium	Yes	Yes	Yes	Medium
WA-4	2	Medium	Medium	Yes	Yes	Yes	Medium
WA-5	2	High	High	Yes	Yes	No	High
WA-6	2	High	Medium	Yes	Yes	No	High
WA-7	2	High	Medium	Yes	Yes	No	High
WA-8	3	Medium	Medium	Yes	Yes	No	High
WA-9	1	High	Low-High	Yes	Yes	No	High
WA-10	2	Medium	Low-Medium	Yes	Yes	Yes	Medium
WA-11	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.38.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.38.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Westampton has no additional risk vulnerabilities that need to be addressed at this time.

9.38.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Westampton is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Westampton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.38-1: Westampton Flood Exposure Map

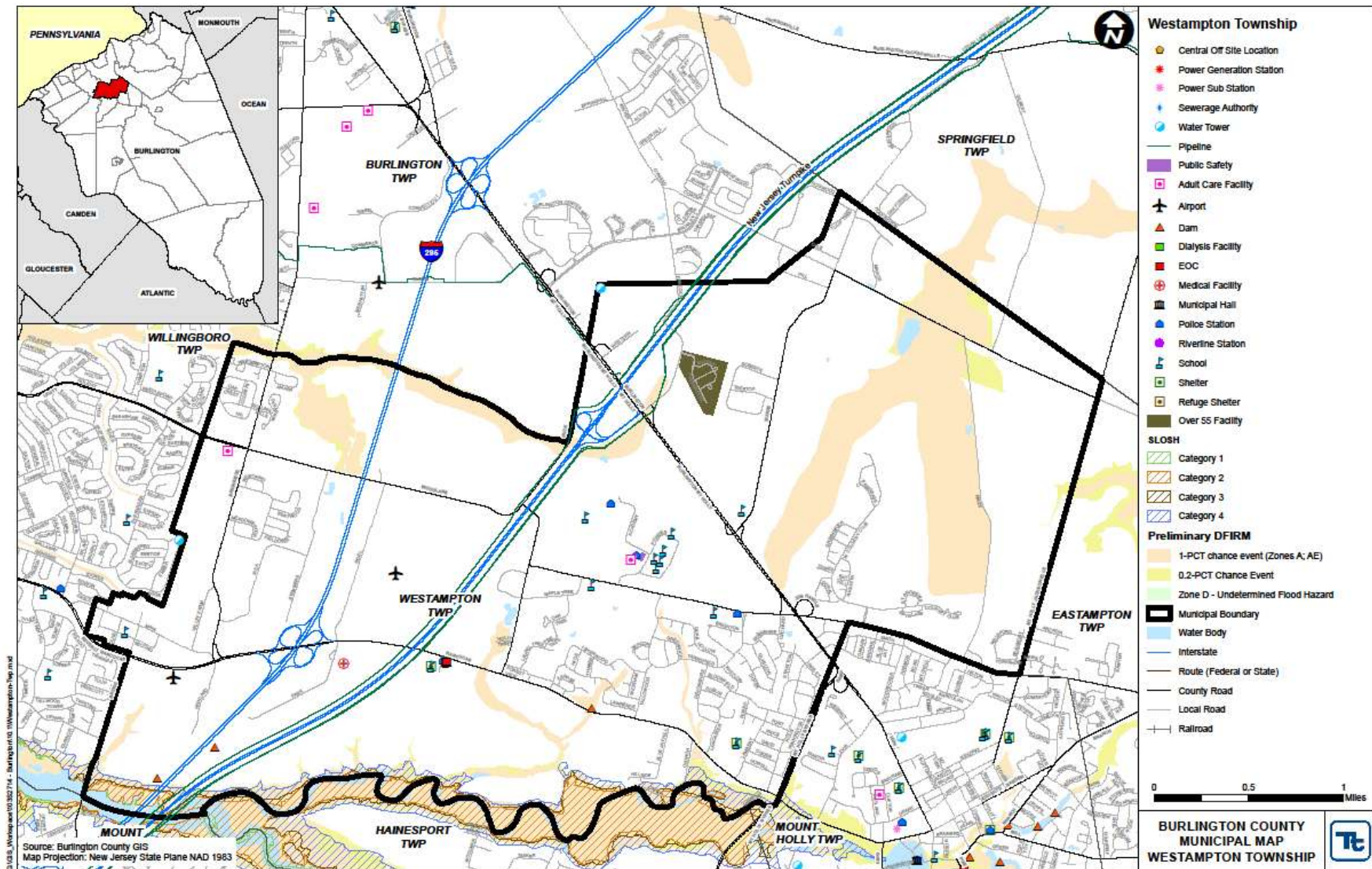
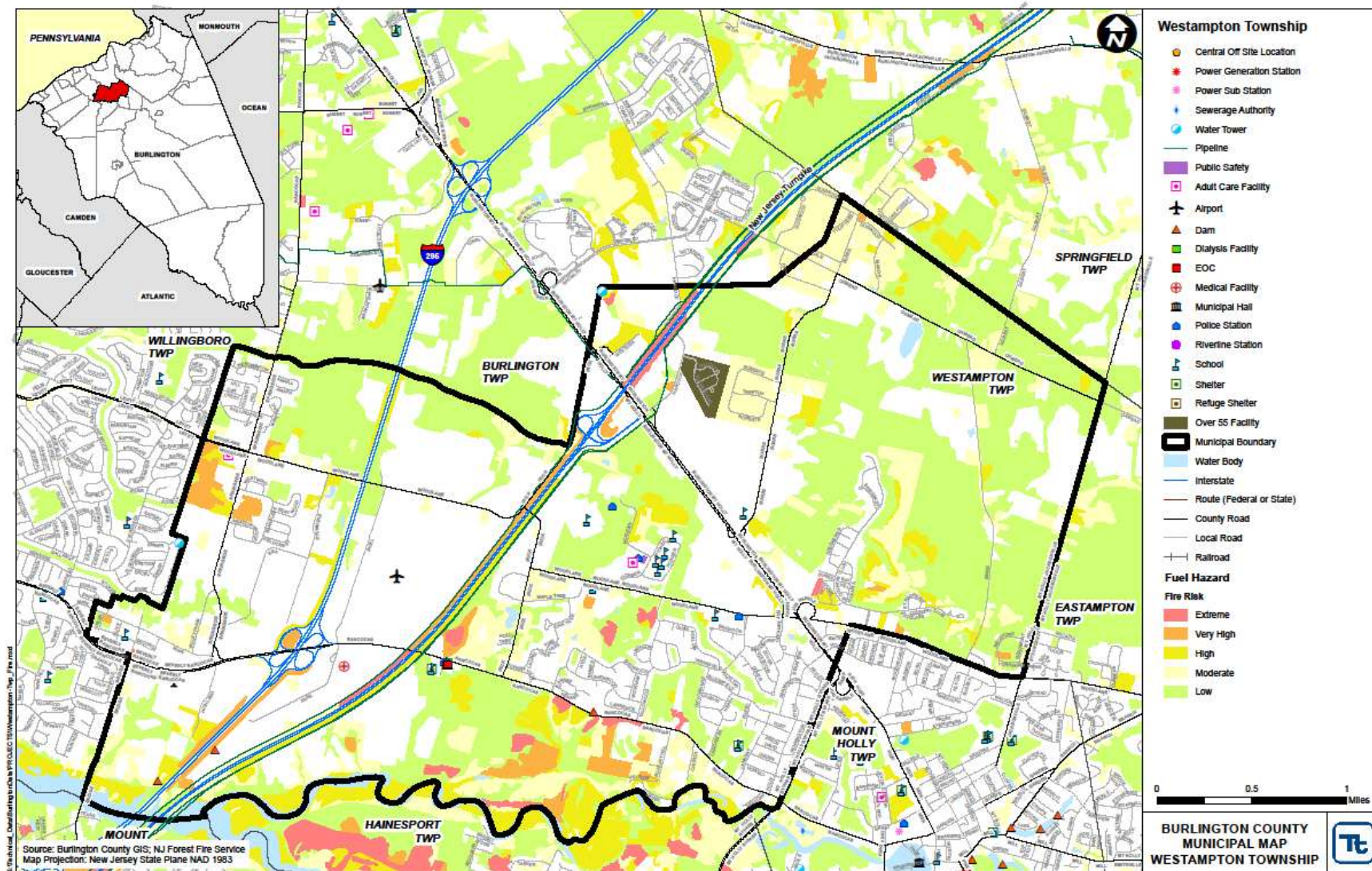


Figure 9.38-2: Westampton Wildfire Fuel Map



9.38.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Westampton to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications.		X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.		X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.		X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.38.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.39 Township of Willingboro

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

9.39.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Joanne G. Diggs Title: Township Manager Address: 1 Rev. Martin Luther King, Jr. Dr. Willingboro, NJ 08046 Phone Number: (609) 877-2200 E-mail Address: jdiggs@willingboronj.gov	Name: John Carroll, Jr. Title: Emergency Management Coordinator Address: 1 Salem Road, Willingboro, NJ 08046 Phone Number: (609) 209-1430 E-mail Address: jcarroll@willingboronj.gov

9.39.2 PROFILE

9.39.2.1 Population

The population of the Township of Willingboro is estimated to be 31,629, based on information gathered during the 2010 U.S. Census.

9.39.2.2 Location

The Township of Willingboro is located in the northwestern portion of Burlington County along the Rancocas River. The Township encompasses 7.8 square miles and is bordered by Route 130 on the north, Rancocas Creek on the west, Westampton Township on the south, and Burlington Township on the east.

9.39.2.3 Brief History

The original inhabitants of Willingboro and the surrounding area were the Lenape, a major Algonquin tribe that once occupied all of present-day New Jersey, Delaware, and eastern Pennsylvania. However, during the early 17th century, Dutch and Swedish traders began to travel and settle in southern New Jersey, and in 1677, a group of English Quakers founded the City of Burlington. This was the beginning of colonization of the Delaware Valley area. William Penn and other members of the Society of Friends an organization founded purchased this territory called West Jersey, by Quakers. West Jersey included the lower half of New Jersey, including the entire Delaware River bank to the New York line.

During the late 1600s, Thomas Olive, a Quaker and one of many English commissioners appointed to acquire land from the Lenape, purchased property along the Rancocas Creek. He named the acreage Wellingborough after his birthplace in England. In 1688, Wellingborough was incorporated making it one of the original Townships of Burlington County. The Township extended west to the Delaware River and included present-day Beverly, Edgewater Park, Delanco Township, and Rancocas Village.

Until the 1950s, agriculture was the major industry of the fledgling Township. In 1859, Wellingborough was reduced and included the Rancocas Village while all land west of the present-day Route 130 became Beverly City.

Over the next 60 years, Wellingborough's average population was less than 700 people. The Township remained a quiet agricultural community throughout World War I, the Great Depression, and World War

II. However, in 1956, the boundaries of the Township were redrawn by an Act of the New Jersey State Legislature. The boundaries are from the Township line on the east to Route 130 on the west and the from Burlington Township line on the north to the Rancocas Creek on the south. In 1962, the Township was renamed Willingboro.¹

9.39.2.4 Governing Body Format

The Township of Willingboro is governed under the Council-Manager (Faulkner Act) form of government. Under this form, The council is the legislative body of the municipality but also appoints the positions of Municipal Clerk, Tax Assessor and well as provides for appointments of members of Boards, Commissions and Authorities. Perhaps most importantly, the council appoints a qualified manager to serve as the chief executive.

The mayor serves as the presiding member of the council. The Manager has the full administrative responsibility for the municipality, including appointment of department heads as well as subordinates, preparation and presentation of the budget and the negotiation of contracts.²

9.39.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the Township. Refer to the map in section 9.6.10) of this annex which illustrates the hazard areas along with the location of potential new development.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Corpus Christi	Res	1 structure	Corner Sunset and Charleston Road Willingboro NJ 08046		N/A	Apartments
Fire House	Comm/Municipal	1 structure	398 Charleston Road Willingboro NJ	Blk 232 Lot 22.01	N/A	Fire House

¹ <http://www.willingboronj.gov/about-us/38-2/>

² http://www.njslom.org/magart0307_p14.html

9.39.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	Tree damages, debris and erosion problems in MS4 areas
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19- 20, 2009	Road closures, tree damages, snow removal issues
Winter Storm	DR-1889	Yes	February 5-6, 2010	Road closures, tree damages, snow removal issues
Severe Storms, Flooding	DR-1897	Yes	March 12- April 15, 2010	Tree and debris management. MS4 tree issues
Winter Storm	DR-1954	Yes	December 26-27, 2010	Road closures, tree damages, snow removal issues
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26- September 5, 2011	Moderate flooding, road closures, storm systems damages requiring repairs, tree and debris removal issues
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	Tree and debris removal and MS4 area erosion issues

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.39.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Willingboro.

Natural 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
Flood	1% Annual Chance: \$38,506,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$6,044,451 500-Year MRP: \$22,896,527 Annualized Loss: \$342,492	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$22,843,530 5% of GBS: \$114,217,650	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$352,937,000	Frequent	18	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$1,236,441 2,500-Year MRP: \$29,418,463 Annualized Loss: \$26,015	Rare	6	Medium
Landslides	Not available	Rare	12	Low

Note:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.39.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Willingboro indicated that the municipality has high planning, regulatory, administrative, technical, and fiscal capability; high community resiliency and community political capability; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.39.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Willingboro.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	March 2013			Inspections			
2) Zoning Ordinance	X	March 2013		Chap 370	Clerk			
3) Subdivision Ordinance	X	March 2013		Chap 370	Clerk			
4) NFIP Flood Damage Prevention Ordinance	X							Coordination with State
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	X	March 2013			County			
7) Stormwater Management Plan/Ordinance	X	March 2013		Chap 324	PW/Engineer			
8) Comprehensive Plan / Master Plan/ General Plan	X	March 2013						
9) Capital Improvements Plan	X	March 2013			Manager Office/ Finance			
10) Site Plan Review Requirements	X	March 2013			Planning Board/ Engineer			
11) Open Space Plan	X	March 2013						
12) Stream Corridor Management Plan	N/A							

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	X	March 2013			Manager			
15) Comprehensive Emergency Management Plan	X				OEM			
16) Emergency Response Plan	X				OEM			
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	X				Inspections			
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.39.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Township Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Township Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Township engineer
4) NFIP Floodplain Administrator	Y	Inspections Construction Official
5) Surveyor(s)	Y	Township Engineer
6) Personnel skilled or trained in GIS applications	Y	Township Engineer / DPW
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Office of Emergency Management
9) Grant Writer(s)	Y	Triad Consulting
10) Staff with expertise or training in benefit/cost analysis	Y	DPW Director / Finance Officer

9.39.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	Yes
9) Withhold public expenditures in hazard-prone areas	Don't Know
10) State mitigation grant programs	Yes
11) Other	

9.39.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Willingboro's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.39.6 MITIGATION STRATEGY

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

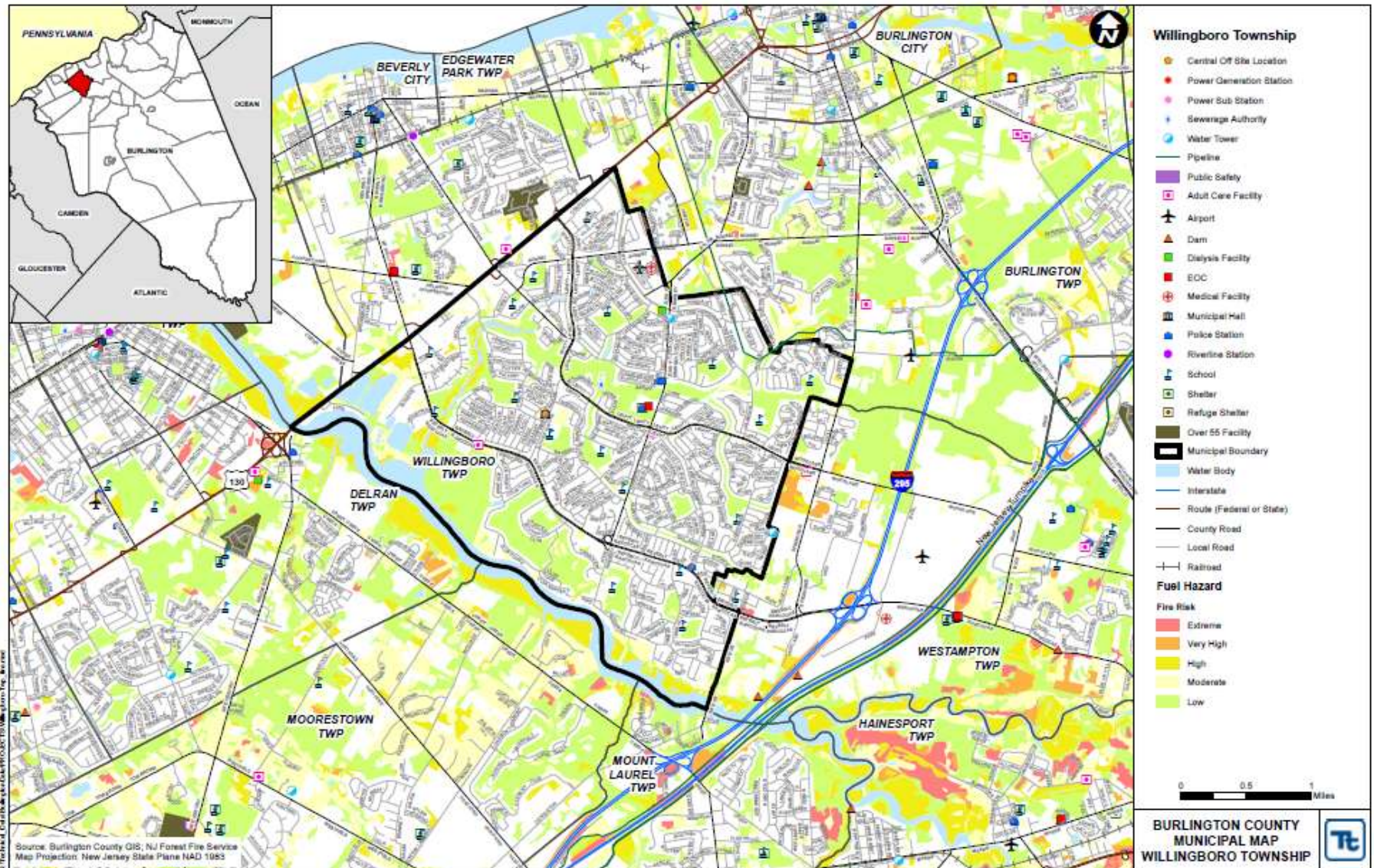
9.39.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.39.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Mitigation for roads that provide key Emergency Services access	X				X	No progress on this action has been completed due to personnel and budget restraints.
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, ofr flood-proof these properties		X				The Township will continue to identify properties regarding flood mitigation opportunities. The Office of Emergency Management will work closely with the Floodplain Administrator.

9.39.6.2 Hazard Vulnerabilities Identified

Though not one of the Townships highest hazards, wildfire is possible within Willingboro as illustrated by the Figure below.



In the Township of Willingboro, an estimated 621 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 13% is located within the 1% annual chance flood area. A total of \$101,801,000 (2.8%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Willingboro has a total of 84 NFIP policies, 0 of which are located within the 1% annual chance flood area. FEMA has identified 1 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Willingboro (T)	84	9	\$40,453	1	0	9	15	69

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate										
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event			Potential Loss from 0.2% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Map

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles in Section 5 of this plan for additional vulnerability information relevant to this jurisdiction.

9.39.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
WB-1	Obtain an Emergency Notification System for residents	N/A	All Hazards	1-1 3-1	Managers Office	High	Medium	Federal Grants, Municipal Budget	Short Term	High	ES
WB-2	Obtain training for NFIP Coordinator	N/A	Flood	1-1 1-3	Inspections, Code Enforcement	High	Low	Municipal Budget	Short Term	Medium	PR
WB-3	Obtain Back Up Power for DPW / Alternate OEM Office	Existing	All Hazards	1-2 1-5 3-2	OEM/DPW	High	Medium	Federal Grants	Short Term	High	ES
WB-4	Obtain MS4 System Municipal Separate Storm Sewer System to assist with debris management	N/A	Flood	1-1 3-1	DPW	High	High	Federal Grants Capital/ O/E	Short Term	High	ES
WB-5	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	NA	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP
WB-6	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low 2,500/year	Municipal Budget	On-going	Medium	PR
WB-7	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include:	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning,	Medium	Medium	Municipal Budget, HMA programs with local or county	Short Term	High	PE

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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
	- Disaster preparedness - Hazard mitigation				NJOEM, FEMA			match			
WB-8	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
WB-9	Obtain and install backup power sources at critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
WB-10	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
WB-11	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
WB-12	Promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	PR
WB-13	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
WB-14	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short Term	High	PR
WB-15	Support the mitigation of vulnerable structures via	Existing	Flood, Severe Storm	1-1 2-1	Municipality (via Municipal	High	High	FEMA Mitigation	Long Term DOF	Medium	PP

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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
	retrofit (eg. Elevation, flood-proofing) or relocation to protect structures from future damage with repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates based on cost-effectiveness and repetitive loss. Phase 2: Work with the property owners to implement selected action based on available funding from the State and FEMA and local match availability.			2-2	Engineer/NFIP Floodplain Administrator) with support from County Planning, NJOEM, FEMA			Grants			

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

2. PP = Property Protection: 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

3. PE = Public Education and Awareness: 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.

4. NR = Natural Resource Protection: 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.

5. SP = Structural Projects: 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.

6. ES = Emergency Services: 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.

9.39.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WB-1	2	High	Medium	Yes	Yes	Yes	High
WB-2	2	High	Low	Yes	Yes	Yes	Low
WB-3	3	High	Medium	Yes	Yes	Yes	High
WB-4	2	High	High	Yes	Yes	No	High
WB-5	2	Medium	Low/Medium	Yes	Yes	No	High
WB-6	7	Medium	Low	Yes	Yes	Yes	Medium
WB-7	3	Medium	Medium	Yes	Yes	No	High
WB-8	1	Medium	Medium	Yes	Yes	Yes	Medium
WB-9	3	Medium	Medium	Yes	Yes	Yes	Medium
WB-10	1	Medium	Low	Yes	Yes	Yes	High
WB-11	1	High	Low – High	Yes	Yes	No	High
WB-12	2	Medium	Medium	Yes	Yes	Yes	Medium
WB-13	3	Medium	Low	Yes	Yes	Yes	Medium
WB-14	3	Medium	Low	Yes	Yes	Yes	High
WB-15	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.39.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.39.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Willingboro has no additional risk vulnerabilities that need to be addressed at this time.

9.39.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Willingboro is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Willingboro has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.39-1: Willingboro Flood Exposure Map

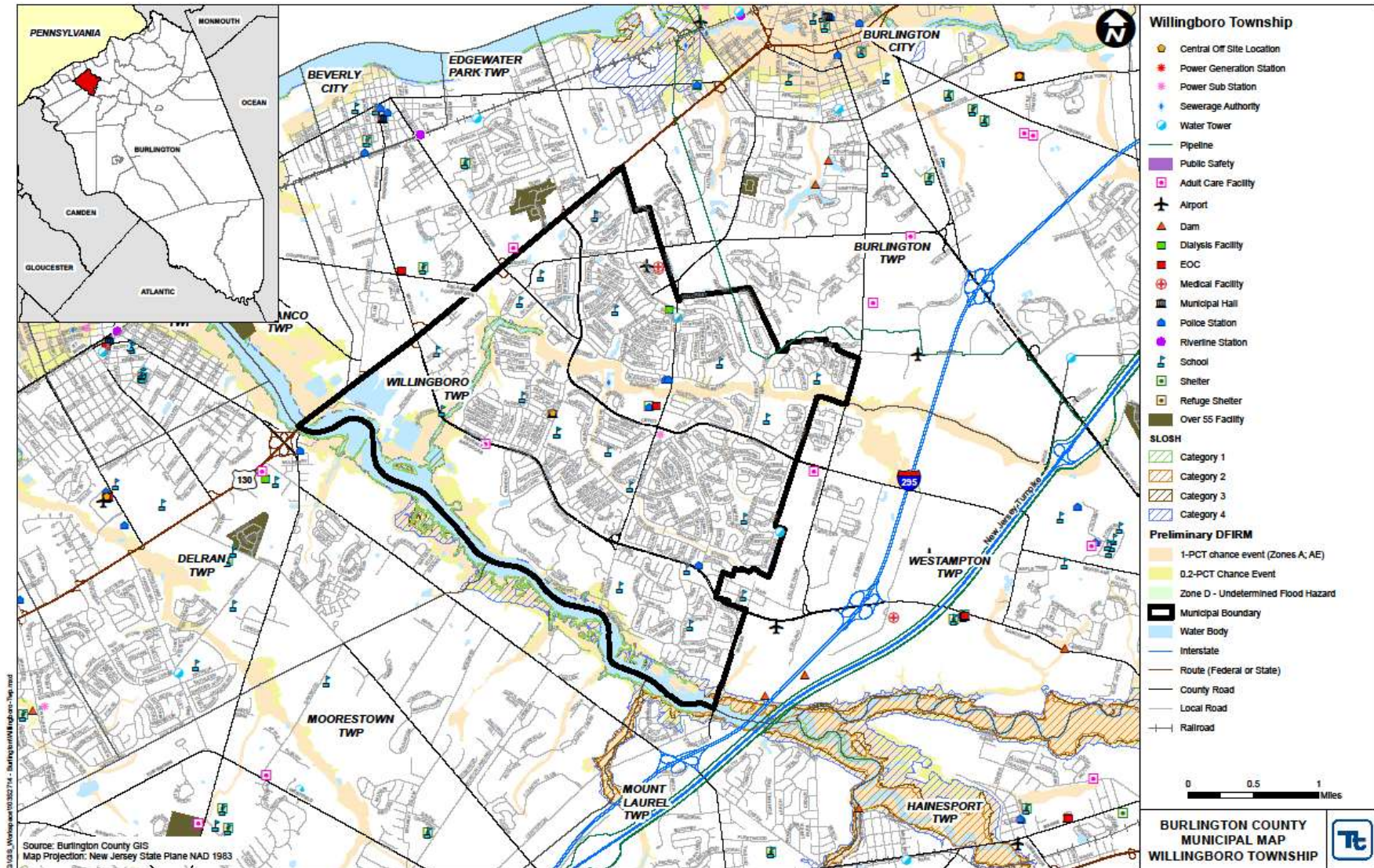
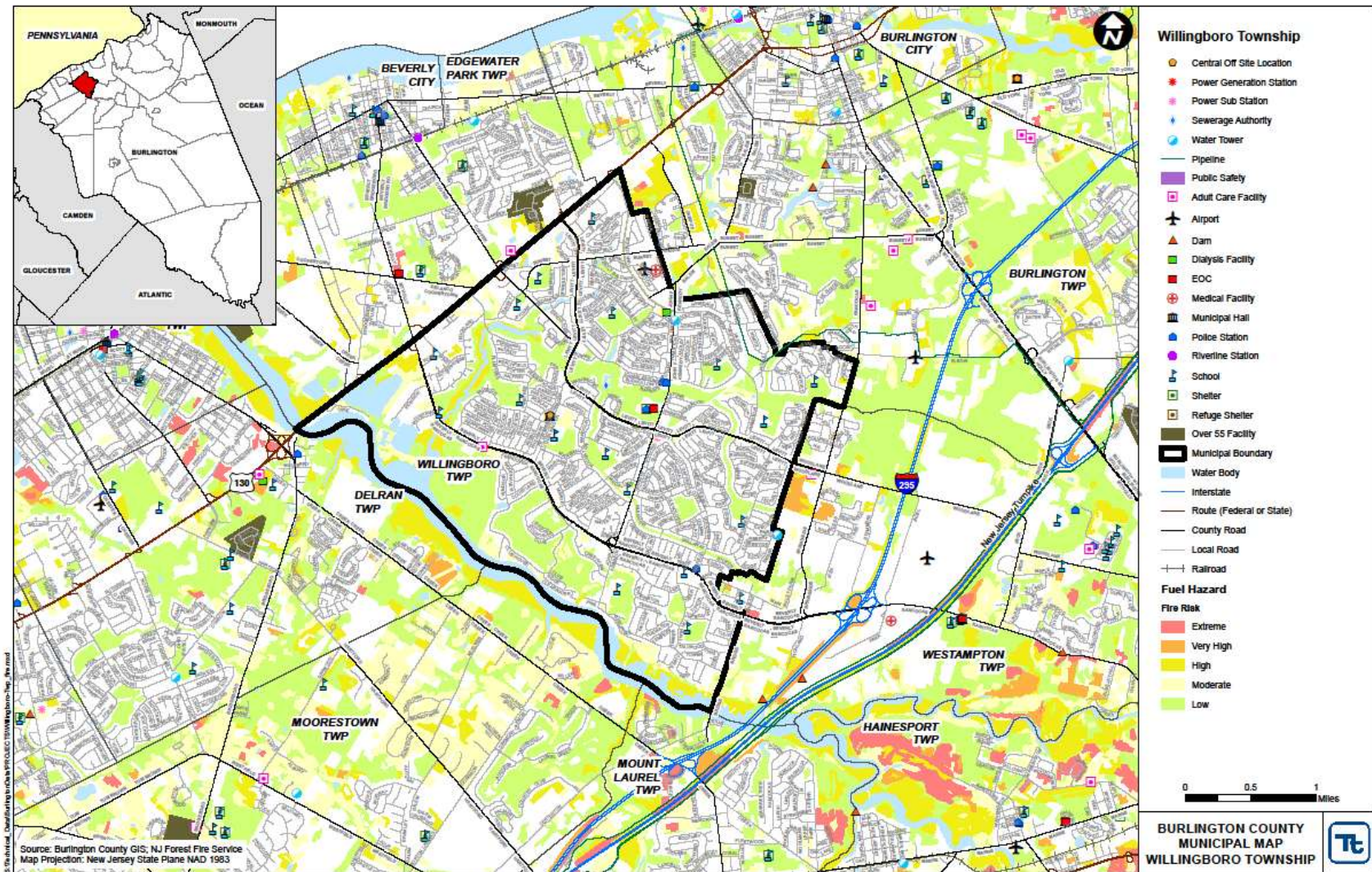


Figure 9.39-2: Willingboro Wildfire Fuel Map



9.39.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Willingboro to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.		
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	X

9.40 Township of Woodland

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

9.40.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Edward Vincent Title: OEM Coordinator Address: 3900 Rt. 563, Chatsworth, NJ 08014 Phone Number: (609) 726-9249 Cell: (856) 341-0875 Fax Number: (609) 726-1996 E-mail Address: evincent@woodlandtownship.org	Name: Thomas Leisse Title: Township Engineer – Pennoni Associates Address: 515 Grove Street, Suite 1B, Haddon Heights, NJ 08035 Phone Number: (856) 656-2922 Fax Number: (856) 547-9174 E-mail Address: tleisse@pennoni.com

9.40.2 PROFILE

9.40.2.1 Population

The population of the Township of Woodland is estimated to be 1,788, based on information gathered during the 2010 U.S. Census.

9.40.2.2 Location

The Township of Woodland is located in the eastern portion of Burlington County and encompasses 96.4 square miles. The Township is bordered by Bass River and Washington Township to the south, Tabernacle to the west, Southampton to the northwest, and Pemberton to the North. In addition, the Township is bordered by the Camden County municipalities of Manchester, Lacey, and Barnegat townships to the east.

9.40.2.3 Brief History

Woodland was incorporated as a township by an Act of the New Jersey Legislature on March 7, 1866, from portions of Pemberton Township, Shamong Township, Southampton Township and Washington Township. Portions of the township were taken to form Tabernacle Township on March 22, 1901.¹

9.40.2.4 Governing Body Format

Woodland Township is governed under the Township form of government with a three-member Township Committee. The Township Committee is elected directly by the voters in partisan elections to serve three-year terms of office on a staggered basis, with one seat coming up for election each year. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor.

Under the township form, all legislative powers are concentrated in the committee. The committee also has all executive powers not placed in the mayor either by general law or the revised Township act. Additionally, all municipalities under the traditional form may appoint, including the township form, may

¹ <http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

appoint a municipal administration and “delegate to him all or a portion of the executive responsibilities of the municipality.”²

9.40.2.5 Growth/Development Trends

The Township of Woodland did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

9.40.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	Roads were closed or severely compromised, creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Roads were closed or severely compromised, creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Roads were closed or severely compromised, creating threats to public safety and health; limiting access to medical facilities, schools, fuel, etc. and limiting access for emergency services.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Heavy tree damage and power outages compromised roadways and threatened public health and safety for residents.
Hurricane Sandy	DR-4086	Yes	October	Heavy tree damage and power outages

² http://www.njslom.org/magart0307_p14.html

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			26-November 8, 2012	compromised roadways and threatened public health and safety for residents.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.40.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Township of Woodland.

Natural 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
Flood	1% Annual Chance: \$1,172,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$124,862 500-Year MRP: \$1,508,673 Annualized Loss: \$19,936	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$750,120 5% of GBS: \$3,750,600	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$93,914,000	Frequent	54	High
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$30,345 2,500-Year MRP: \$691,827 Annualized Loss: \$572	Rare	6	Medium
Landslides	Not available	Rare	6	Low

Note:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.40.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Township of Woodland indicated that the municipality has moderate planning, regulatory, administrative, technical, and fiscal capability; moderate community resiliency and community political capability; and a willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.40.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Woodland.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	Adopted 1983 Updated 1997			Construction	+	+	
2) Zoning Ordinance	X	Updated 1997			Land Use	+	+	
3) Subdivision Ordinance	X	Updated 1997			Land Use	+	+	
4) NFIP Flood Damage Prevention Ordinance	N/A							
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	Updated 2008			Land Use	+	+	
8) Comprehensive Plan / Master	X	Updated			Land Use	+	+	

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
Plan/ General Plan		2010						
9) Capital Improvements Plan	X				Finance			
10) Site Plan Review Requirements	X							
11) Open Space Plan	N/A							
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	X	Updated 2012			OEM	+	+	Plan approved until 2015
16) Emergency Response Plan			X		OEM			Currently on hold Emergency Council Meeting to develop a plan
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A							

9.40.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Land Use
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Administrator
3) Planners or engineers with an understanding of natural hazards	Y	Administrator
4) NFIP Floodplain Administrator	N	
5) Surveyor(s)	Y	Administrator
6) Personnel skilled or trained in GIS applications	Y	Administrator
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	OEM
9) Grant Writer(s)	Y	Administrator
10) Staff with expertise or training in benefit/cost analysis	Y	Administrator

9.40.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	No
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State mitigation grant programs	No
11) Other	

9.40.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Woodland's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.40.6 MITIGATION STRATEGY

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

9.40.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.40.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Mitigation for roads that provide key Emergency Services access				x		This action is completed as no roadways have been identified in need of mitigation measures for emergency services.
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood-proof these properties	x					This action is ongoing. Staffing and budget cuts have hampered identification of properties and speaking with homeowners.
Protection of homes on Pomona Road area from forest fire coming from north by clearing of White House Road.		x				Currently assessing residence vulnerability along Pomona Road

9.40.6.2 Hazard Vulnerabilities Identified

In the Township of Woodland, an estimated 167 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 27% is located within the 1% annual chance flood area. A total of \$7,591,000 (6.6%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Township of Woodland has a total of 3 NFIP policies, 2 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Woodland (T)	3	1	\$862	0	0	2	2	1

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available

T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.40.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
WD-1	Install an emergency generator at the Woodland Twp. School and Fire Department	Existing	All	1-1 1-2 3-2	Lead: Woodland Twp Support: County, NJOEM	High	High	FEMA HMA with local Improvements Budget 25% cost share	Short Term	High	PR
WD-2	Obtain and install high speed internet throughout the township	N/A	All	1-1	Lead: Verizon Support: Woodland Twp./NJOEM	High	High	Existing Budget	Short Term	High	PE
WD-3	Conduct public outreach awareness days on emergency management and disaster preparedness and prevention	N/A	All	1-1 5-1	Municipal Clerk, OEM	Medium	Low	Existing Budget	Short Term	Low	PE
WD-4	Develop public outreach and education efforts regarding wildfire hazard prevention and protection	N/A	Fire	1-1 5-1 5-3	Municipal Clerk, OEM	Medium	Low	Existing Budget	Short Term	Low	PE
WD-5	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee; Planning	Medium	Low	Twp./Public	On-going	Medium	PR
WD-6	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
WD-7	Improve municipal communication systems to	N/A	All Hazards	3-2	Municipality with support	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR

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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
	include information sharing with county and surrounding municipalities.				from County, NJOEM and FEMA						
WD-8	Obtain and install backup power sources at all critical facilities.	N/A	All Hazards	1-2 1-5 3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
WD-9	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
WD-10	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
WD-11	Promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	PR
WD-12	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
WD-13	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk, OEM	Medium	Low	Municipal Budget	Short Term	High	PR
WD-14	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	NA	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PR

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
WD-15	Evaluate benefits of participating in the Firewise Program	Existing	Wildfire	1-1 1-5 2-1 3-1 4-1 5-1	Municipal OEM	Medium	Low	Municipal Government, OEM	Short Term	Medium	PR

Notes:

*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:

ARC	American Red Cross
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program
NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.40.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WD-1	3	High	High	Yes	Yes	Yes	High
WD-2	1	High	High	Yes	No	Yes	High
WD-3	2	Medium	Low	Yes	Yes	No	Low
WD-4	3	Medium	Low	Yes	Yes	Yes	Low
WD-5	7	Medium	Low	Yes	Yes	Yes	Medium
WD-6	3	Medium	Medium	Yes	Yes	No	High
WD-7	1	Medium	Medium	Yes	Yes	Yes	Medium
WD-8	3	Medium	Medium	Yes	Yes	Yes	Medium
WD-9	1	Medium	Low	Yes	Yes	Yes	High
WD-10	1	High	Low – High	Yes	Yes	No	High
WD-11	2	Medium	Medium	Yes	Yes	Yes	Medium
WD-12	3	Medium	Low	Yes	Yes	Yes	Medium
WD-13	3	Medium	Low	Yes	Yes	Yes	High
WD-14	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
WD-15	6	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.40.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.40.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Township of Woodland has no additional risk vulnerabilities that need to be addressed at this time.

9.40.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Woodland is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Woodland has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.40-1: Woodland Flood Exposure Map

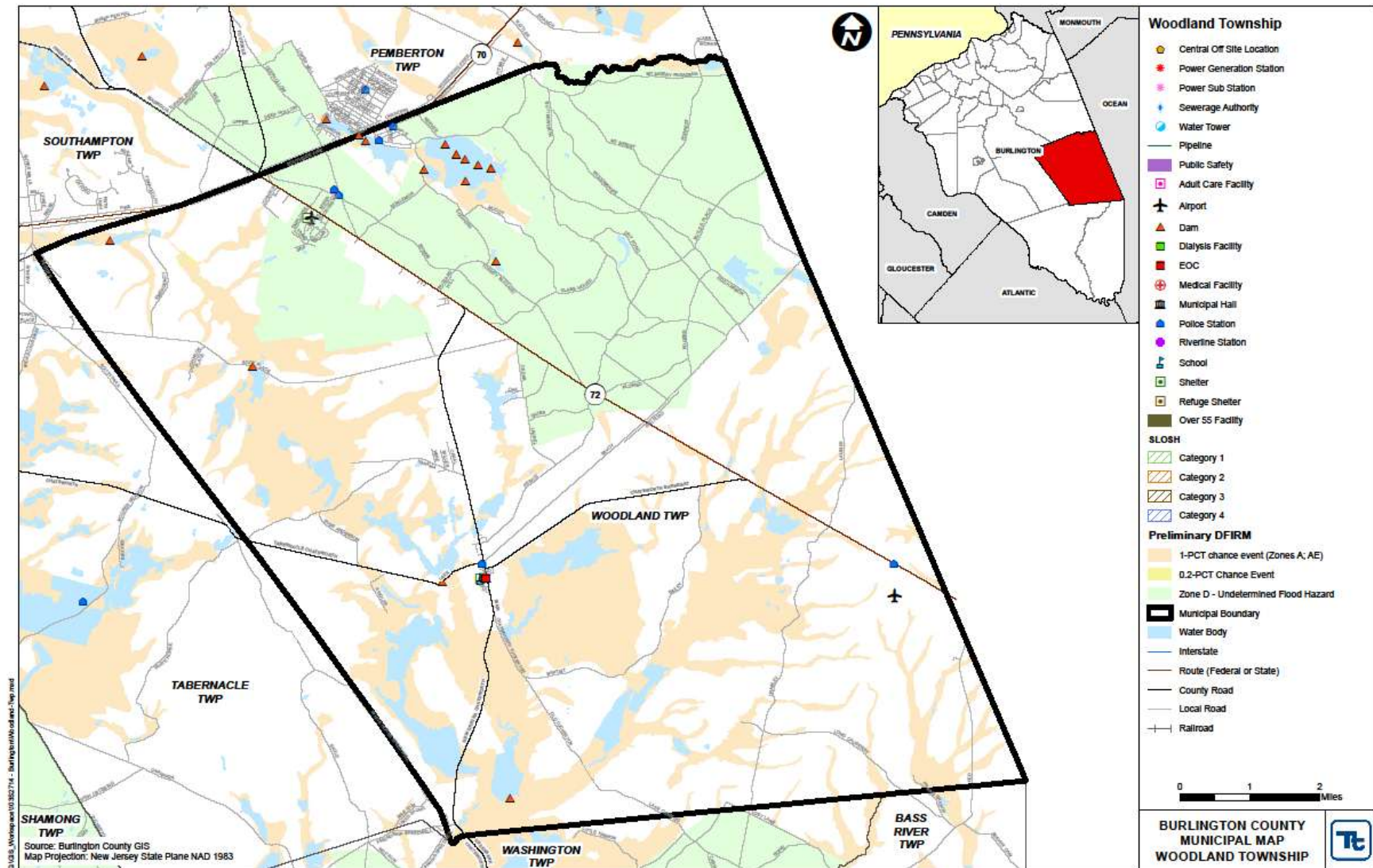
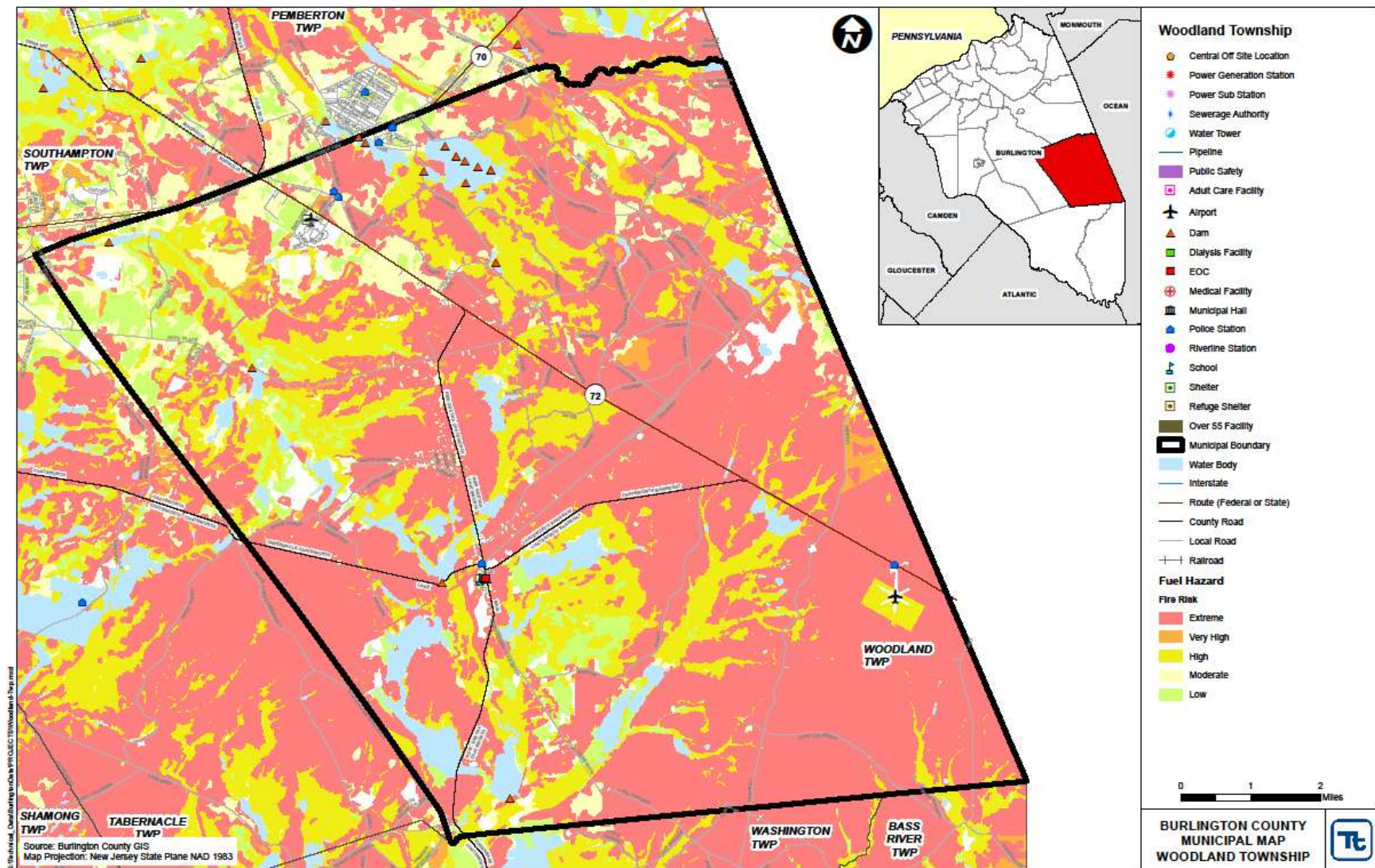


Figure 9.40-2: Woodland Wildfire Fuel Map



9.40.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Township of Woodland to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.		X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.		
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.		X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.		X

9.40.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.41 Borough of Wrightstown

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

9.41.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: James Ingling Title: Deputy Coordinator, Emergency Management Address: 21 Saylor's Pond Road Phone Number: (609) 723-4450 Ext. 14 Cell: (609) 817-3134 Fax Number: 609-723-7137 E-mail Address: wrightstownfirebureau@comcast.net	Name: Costic Borsavage Title: Coordinator, Emergency Management Address: 21 Saylor's Pond Rd Phone Number: 609-723-4450 Cell: (609) 817-3133 Fax Number: 609-723-7137 E-mail Address: cborsavage@nwl.com

9.41.2 PROFILE

9.41.2.1 Population

The population of the Borough of Wrightstown is estimated to be 802, based on information gathered during the 2010 U.S. Census.

9.41.2.2 Location

The Borough of Wrightstown is located in the northeastern portion of Burlington County. The Borough is bordered by New Hanover to the east, south, and west, and North Hanover to the north.

9.41.2.3 Brief History

Wrightstown was incorporated as a borough by an Act of the New Jersey Legislature on March 4, 1918, from portions of New Hanover Township and North Hanover Township, based on the results of a referendum held on March 26, 1918.¹

9.41.2.4 Governing Body Format

Wrightstown is governed under the Borough form of New Jersey municipal government. The government consists of a Mayor and a Borough Council made up of six council members, with all positions elected at large in partisan elections. A Mayor is elected directly by the voters to a four-year term of office. The Borough Council consists of six members elected to serve three-year terms on a staggered basis, with two seats coming up for election each year.²

9.41.2.5 Growth/Development Trends

¹ <http://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin67.pdf>

² http://www.njslom.org/magart0307_p14.html

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In 1999 the Borough of Wrightstown acquired 41 acres of property from the United States Army along Saylor's Pond Road and Fort Dix Street. This Borough is in the process of selecting a developer to develop this parcel with 19 commercial structures. The anticipated start date of this project is late 2014.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Wrightstown Borough	Commercial	19	Fort Dix Street & Saylor's Pond Rd.		N/A	

9.41.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

Burlington County has a history of 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. The table below presents a summary of events that have occurred from 2008 to the present to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland/Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-20, 2009	None
Winter Storm	DR-1889	Yes	February 5-6, 2010	None
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Record snowfall creating transportation issues..
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Flooding of Fort Dix Street cutting off emergency access to the North side of our town. No monetary damage to structures.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Flooding of Fort Dix Street cutting off emergency access to the North side of our town. No monetary damage to structures

Note:



DR = Major Disaster Declaration
 EM = Emergency Declaration
 IA = Individual Assistance is eligible for the declaration.
 N/A = Not applicable
 PA = Public Assistance is eligible for the declaration.

9.41.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the Borough of Wrightstown.

Natural 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
Flood	1% Annual Chance: \$7,627,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$101,450 500-Year MRP: \$1,001,049 Annualized Loss: \$14,582	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$803,200 5% of GBS: \$4,016,000	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$103,630,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$68,939 2,500-Year MRP: \$1,524,577 Annualized Loss: \$1,458	Rare	6	Medium
Landslides	Not available	Rare	6	Low

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

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. The valuation of general building stock and loss estimates was based on custom inventory for Burlington County.

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract.

9.41.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community resiliency
- Community political capability
- Community classification.

Officials from the Borough of Wrightstown indicated that the municipality has moderate planning, regulatory, administrative, technical, and fiscal capability; community resiliency and community political capability; and a moderate political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.41.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Wrightstown.

Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
1) Building Code	X	Adopted 1979 Updated 1981	-	Borough Chapter 57	Construction Department	+	+	Refers to all NJ DCA guidelines.
2) Zoning Ordinance	X	Adopted 1998	-	Borough Chapter 219	Joint Land Use Board			
3) Subdivision Ordinance	X	Adopted 1998		Borough Chapter 219	Joint Land Use Board			
4) NFIP Flood Damage Prevention Ordinance	X	Adopted 1986		Borough Chapter 89	Construction Department			
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	Adopted Dec 27, 2007		Borough Chapter 184	Joint Land Use Board			

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Tool / Program	Status			Code Citation Section, Paragraph, Page Number	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development					
8) Comprehensive Plan / Master Plan/ General Plan	X	Updated Dec 13,2011	—		Joint Land Use Board			
9) Capital Improvements Plan	N/A							
10) Site Plan Review Requirements	X	Adopted 1998	—		Joint Land Use Board			
11) Open Space Plan	N/A							
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	X	June 1, 1999						
15) Comprehensive Emergency Management Plan	X	Updated 2013	—		OEM			
16) Emergency Response Plan								
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.41.5.2 Administrative and Technical Capability

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

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Joint Land Use Board
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Borough Council
3) Planners or engineers with an understanding of natural hazards	Y	Borough Council
4) NFIP Floodplain Administrator	Y	Construction Official
5) Surveyor(s)	Y	Borough Engineer
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Emergency Management
9) Grant Writer(s)	Y	Borough Council
10) Staff with expertise or training in benefit/cost analysis	Y	Tax Assessor

9.41.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Unknown
8) Incur debt through private activity bonds	Unknown
9) Withhold public expenditures in hazard-prone areas	Unknown
10) State mitigation grant programs	Yes
11) Other	

9.41.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Borough of Wrightstown's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 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/>

9.41.6 MITIGATION STRATEGY

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

9.41.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.41.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Flooding on the North side of Fort Dix Street in the area of 82-84 Fort Dix Street.					X	Project is along Burlington County Rte. 545 and is within the County Right of Way. They have been advised but we do not know if any further action has or will be taken. The Borough will support any decision by Burlington County Highway Dept. and implement their recommendations
Identify deficiencies in infrastructure causing flooding issues and repair or replace as needed.					X	The Borough continues to identify through emergency management and borough safety office.

9.41.6.2 Hazard Vulnerabilities Identified

In the Borough of Wrightstown, an estimated 46 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 2% is located within the 1% annual chance flood area. A total of \$11,856,000 (8.5%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The Borough of Wrightstown has a total of 7 NFIP policies, 2 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties.

Further information regarding the summary of the community's participation in the NFIP is provided in the table below.

NFIP Summary								
Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Boundary (3)	# Policies in 0.2% - Boundary (3)	# Policies Outside the 0.2% Flood Hazard (3)
Wrightstown	7	1	\$15,632	0	0	2	2	5

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 in April 2012 using the "Comm_Name." These statistics are current as of 2013. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013)
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates, 2013

Critical Facility Damage Estimate							
Name	Municipality	Type	Exposure		Potential Loss from 1% Flood Event		
			1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: HAZUS-MH 2.1

Notes:

- = No loss (calculated by HAZUS-MH 2.1)

X = Facility located within the DFIRM boundary.

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

DFIRM = Digital Flood Insurance Rate Maps

HAZUS = Hazards United States

NA = Not available
T = Town

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

PLEASE REFER TO THE HAZARD PROFILES IN SECTION 5 OF THIS PLAN FOR ADDITIONAL VULNERABILITY INFORMATION RELEVANT TO THIS JURISDICTION.

9.41.7 PROPOSED HAZARD MITIGATION INITIATIVES

Some of the identified mitigation initiatives in the table below 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.

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
WR-1	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee, Planning, OEM, Floodplain Adm.	Medium	Low	Municipal Government, OEM and Floodplain Admin.	Short Term	Medium	PR
WR-2	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness • Hazard mitigation	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	PE
WR-3	Improve municipal communication systems to include information sharing with county and surrounding municipalities.	N/A	All Hazards	3-2	OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES PR
WR-4	Obtain and install backup power sources at all critical facilities to include shelters.	N/A	All Hazards	1-2 1-5 3-2	Municipality engineering, OEM with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	ES
WR-5	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipal Government, OEM with support from County, NJOEM, FEMA and surrounding	Medium	Low	Municipal Budget	Short Term	High	PR, ES

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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
					communities						
WR-6	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	New and Existing	All Hazards	1-4	Municipal Government, OEM with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	PR
WR-7	Continue to promote the participation of Floodplain Administrator within the planning process and other related activities.	N/A	Flood	1-4 4-2	Municipal Government with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	On-going	Medium	PR
WR-8	Enhance community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-1 1-5 3-1	OEM with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	PE
WR-9	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk, OEM and government	Medium	Low	Municipal Budget	Short Term	High	PR
WR-10	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	N/A	Severe Storm, Severe Winter Storm	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	Short Term	Medium	PR

Notes:

*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:

DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
HMA	Hazard Mitigation Assistance
HMP	Hazard Mitigation Proposal
N/A	Not applicable
NFIP	National Flood Insurance Program



NJOEM	New Jersey Office of Emergency Management
NOAA	National Oceanic and Atmospheric Administration
USACE	U.S Army Corp of Engineers
USGS	U.S. Geological Survey

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.

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

Timeline:

Short = 1 to 5 years

Long Term = 5 years or greater

OG = On-going program

DOF = Depending on funding

Notes (for Mitigation Type):

1. PR = Prevention: 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.
2. PP = Property Protection: 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.
3. PE = Public Education and Awareness: 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.
4. NR = Natural Resource Protection: 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.
5. SP = Structural Projects: 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.
6. ES = Emergency Services: 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.

9.41.8 PRIORITIZATION OF MITIGATION INITIATIVES

The table below summarizes the priority levels for each mitigation initiative, listed by number.

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WR-1	7	Medium	Low	Yes	Yes	Yes	Medium
WR-2	3	Medium	Medium	Yes	Yes	No	High
WR-3	1	Medium	Medium	Yes	Yes	Yes	Medium
WR-4	3	Medium	Medium	Yes	Yes	Yes	Medium
WR-5	1	Medium	Low	Yes	Yes	Yes	High
WR-6	1	High	Low – High	Yes	Yes	No	High
WR-7	2	Medium	Medium	Yes	Yes	Yes	Medium
WR-8	3	Medium	Low	Yes	Yes	Yes	Medium
WR-9	3	Medium	Low	Yes	Yes	Yes	High
WR-10	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.41.8.1 Explanation of Priorities

Explanations of priority classifications used to assess the mitigation initiatives described in this annex are presented below:

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are an on-going projects that meet eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Grant Program. High-priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, where the potential benefits outweigh the costs. Funding for medium-priority projects has not been secured but these projects are eligible for grants under HMGP, PDM, or other grant programs. These projects can be completed in the short term, once funding is completed. Medium-priority projects will become high-priority projects once funding is secured.

Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline for completion is considered long term (1 to 10 years). Low-priority projects may be eligible other sources of grant funding from other programs. A low-priority project could become a high-priority project once funding is secured as long as it could be completed in the short term.

9.41.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Borough of Wrightstown has no additional risk vulnerabilities that need to be addressed at this time.

9.41.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Borough of Wrightstown is provided on the following page. This map is based on the best data available at the time of the preparation of this plan, and is 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 Wrightstown has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.41-1: Wrightstown Flood Exposure Map

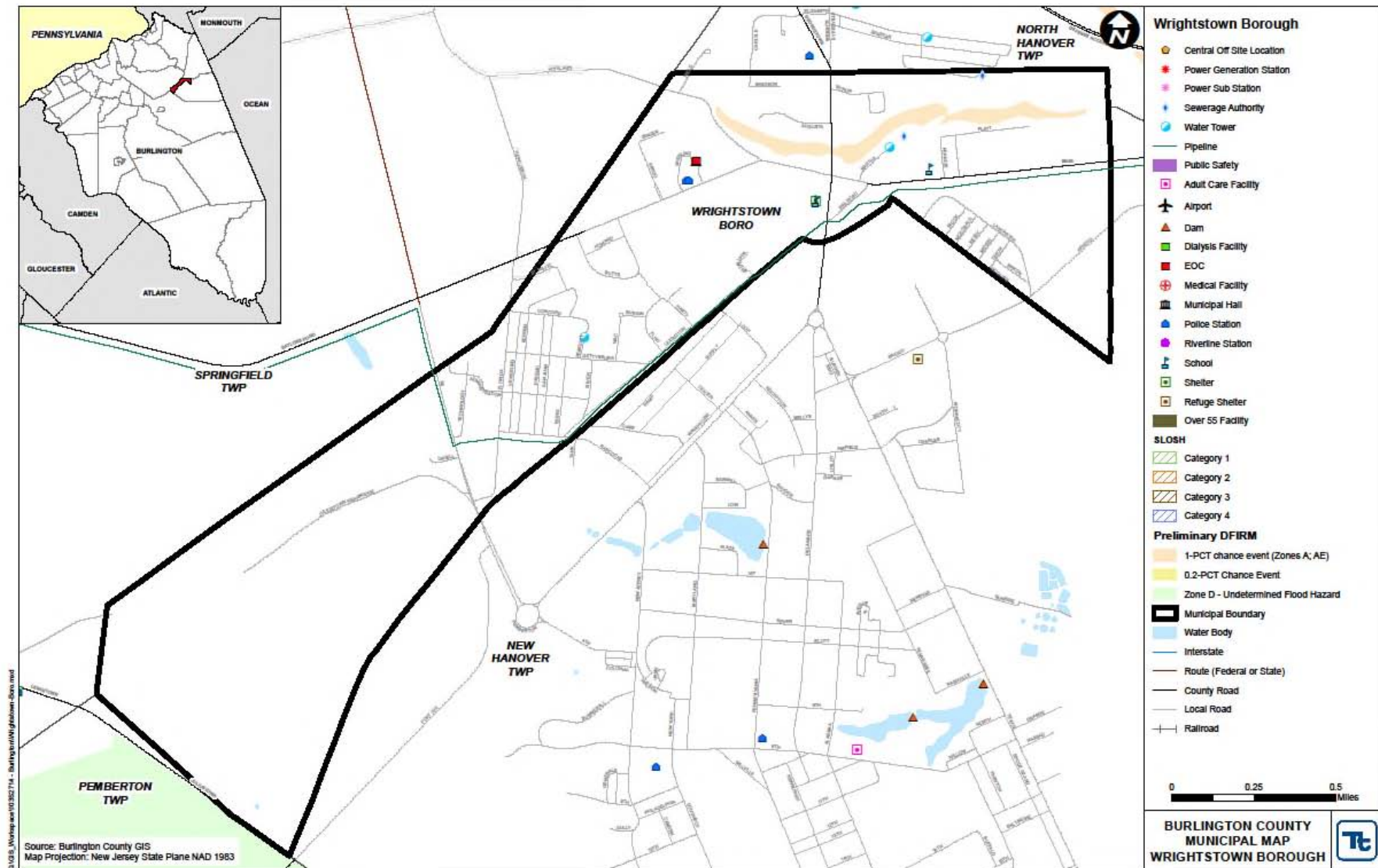
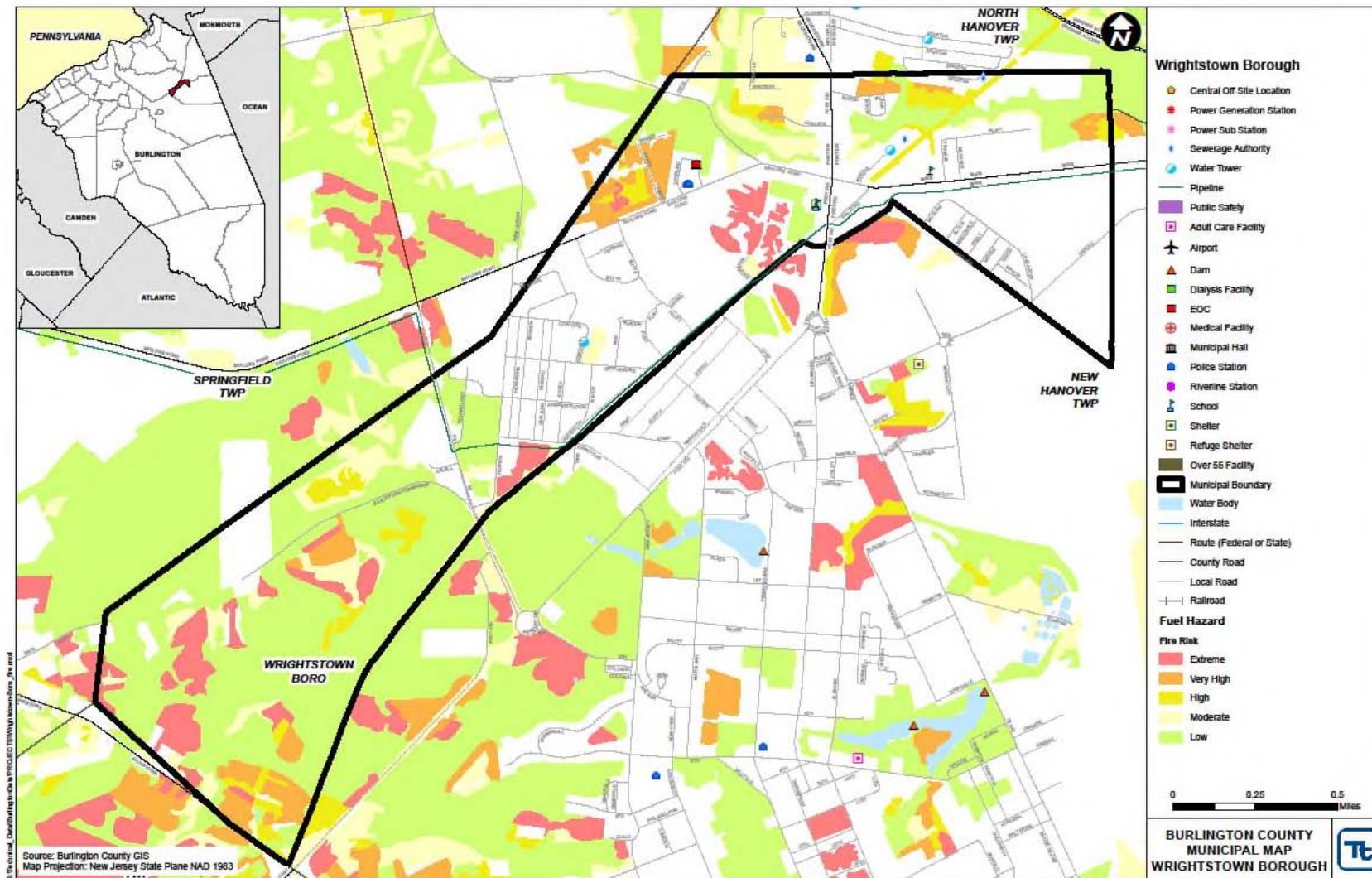


Figure 9.41-2: Wrightstown Wildfire Fuel Map



9.41.11 STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of the Borough of Wrightstown to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been or will be incorporated into municipal procedures.

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain hazard mitigation actions.	X	X
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the municipality will review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable, the municipality will incorporate hazard mitigation actions in the development and extent of the regulations.	X	X
Grant Applications Data and maps will be used as supporting documentation in grant applications.	X	X
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	X	X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	X	X
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The municipality will incorporate hazard-resistant construction standards into the design and location of projects.	X	X
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	X	X
Local School Service Projects The municipality will work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's hazard mitigation actions can be implemented as a joint project with the school district.	X	X
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	X	X
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	X	X

9.41.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.42 BURLINGTON COUNTY COLLEGE

This section presents the jurisdictional annex for Burlington County College.

9.42.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Name: Linda Schmidt Title: Director Public Safety Address: 601 Pemberton Brown Mills Rd Pemberton, NJ 08068 Phone Number: (609)894-9311 x 1340 Fax Number: (609)726-0040 E-mail Address: lschmidt@bcc.edu	Name: Arthur Dorst Title: Assistant Director of Public Safety Address: 601 Pemberton Brown Mills Rd Pemberton, NJ 08068 Phone Number: (609) 894-9311 Ext. 2100 Fax Number: (609)726-0040 E-mail Address: adorst@bcc.edu

B.) PROFILE

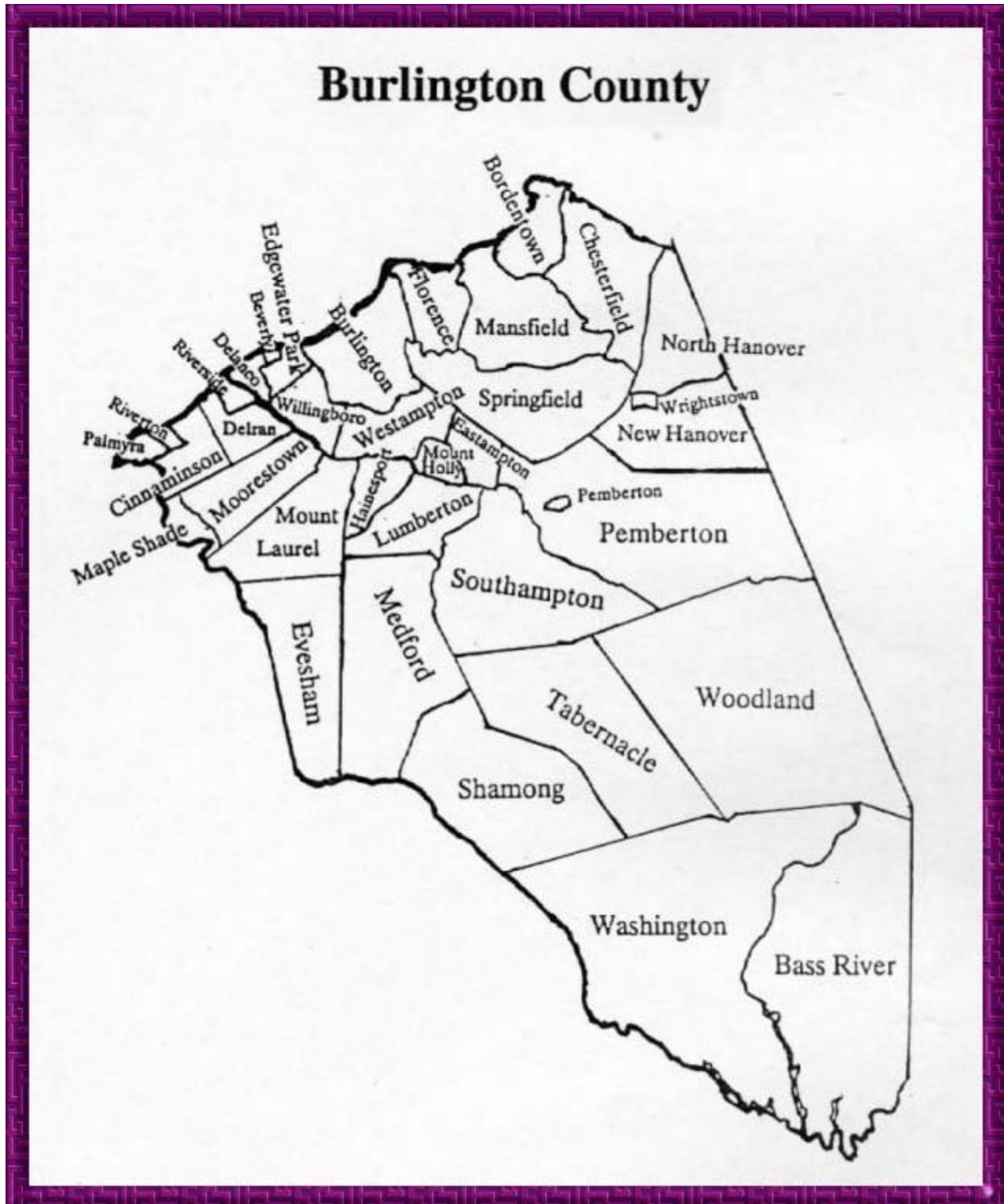
- 1.) **Land Area Served: Burlington County, NJ - 524,160 acres**
- 2.) **Population Served: Burlington County, NJ ~ 448,734 residents; ~ 10,000 students annually**
- 3.) **Land Area Owned: 325 acres**
- 4.) **List of Critical Infrastructure/Equipment:**
 - a. Grounds Maintenance (mowers, etc.) = \$251,149.28
 - b. Custodial Equipment = \$77,760.23
 - c. BCC Owned IT equipment = \$7,787,212.00
 - d. Furniture = \$31,232,300
 - e. Vehicles = \$935, 329.43
- 5.) **Value of Critical Infrastructure/Equipment: \$39,348,421.51**
- 6.) **List of Critical Facilities (owned by BCC):** At estimated replacement cost
 - a. Maintenance and Storage (35,810 sf) = \$4,651,434
 - b. Administration – note Administrative offices are located and included within the all the College facilities listed herein
 - c. Mount Holly Center (39,475 sf) = \$17,000,000
 - d. Willingboro Center (29,500 sf)= \$0.00
 - e. Athletic Fields = \$100,000
 - f. Pemberton Campus

Name of Building	Square Feet	Estimated Replacement Cost (\$)
Lewis Parker Center	180,000	46,060,000
Academic	50,000	13,889,000
William K. McDaniel ILRC	42,000	10,742,000
Physical Education	45,000	8,949,000

g. Mount Laurel Campus

Name of Building	Square Feet	Estimated Replacement Cost (\$)
E Center & Science	113,000	26,615,000
Technology & Engineering Center	67,000	17,897,000
Laurel Hall	53,745	12,095,000
Central Energy Plant	8,900	12,000,000
Business Incubator	20,000	6,500,000
Science Incubator	12,650	Included with Business Incubator
120 Hartford Rd.	1,800	180,000
122 Hartford Rd.	1,200	120,000
126 Hartford Rd.	1,400	120,000
102 Hartford Rd.	5,600	300,000
Briggs Road Center	25,590	0.00

C.) OUTLINE OF AREA SERVED



D.) CURRENT AND ANTICIPATED SERVICE TRENDS

Burlington County College expects a marginal decrease in enrollment within the next five years.

E.) NATURAL HAZARD EVENT HISTORY

Burlington County has a history of natural hazard events as detailed in Volume I, Section 5 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events affecting the County and its municipalities. Below is presented a summary of events dating from the year 2000 to indicate the range and impact of natural hazard events in this community. Specific damages have been indicated if available from reference or local sources. For details of events prior to 2000, refer to Volume I, Section 5 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms and Inland and Coastal Flooding (also identified as a Nor'Easter)	DR-1694	Yes	April 14-20, 2007	None
Fire Management Assistance Declaration	FM-2695	Yes	May 15-29, 2007	None
Snowstorm	DR-1873	Yes	December 19-20, 2009	None
Snowstorm	DR-1889	Yes	February 5-6, 2010	None
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Severe Winter Storm and Snowstorm	DR-1954	Yes	December 26-27, 2010	None
Tropical Storm/Hurricane Irene	DR-4021 / EM-3332	Yes	August 26 - September 5, 2011	None
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	None

F.) NATURAL HAZARD RISK RANKING

Natural Hazard Risk/Vulnerability Risk Ranking			
Hazard type	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^a
Flood	Frequent	18	Medium
Severe Storm	Frequent	30	Medium
Severe Winter Storm	Frequent	33	High
Coastal Erosion	Rare	6	Low
Wildfire	Frequent	24	Medium
Drought	Occasional	14	Medium
Earthquake	Rare	6	Medium
Landslides	Rare	6	Low

Note

- a. 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

G.) EXISTING APPLICABLE HAZARD MITIGATION CODES, ORDINANCES OR POLICIES

Burlington County College does not currently have any applicable hazard mitigation codes, ordinances, or policies.

H.) EXISTING APPLICABLE NATURAL HAZARDS MITIGATION ASSOCIATED PLANS AND/OR DOCUMENTS

Burlington County College maintains a Campus Emergencies and Safety Procedures Guide and a standard fire evacuation plan. In addition, the College facilitates table top exercises associated with clearing or closing the campus.

I.) DISTRICT MITIGATION RELATED CLASSIFICATIONS

District Classifications		
Program	Classification	Date Classified
Public Protection	NP	NA
Fire Wise	NP	NA
Storm Ready	NP	NA

Previous or Ongoing Initiatives

Upon notice of high winds and/or potential floods, heavy snow fall, the Physical Plant and Public Safety Departments work to clear all loose materials from the outside grounds to include trash and recycle cans as well as apply tape to large glass areas within the college.

The College additionally maintains a Campus Emergencies and Safety Procedures Guide. This document provides the foundation for all activities associated with emergency management, including mitigation, for the College.

J.) 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 Type
BCC-1	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	N/A	All	1-4	BCC, OEM with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	College Budget, FEMA planning grants	On-going	High	PR
BCC-2	Obtain and install backup power sources at critical facilities on campus	Existing	All	1-2 1-5 3-2	BCC with support from County, NJOEM and FEMA	Medium	Medium	Grants, College Budget	Short Term	Medium	ES
BCC-3	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: - Disaster preparedness - Hazard mitigation	N/A	All	1-5 5-1 5-3	BCC, OEM and local government	Medium	Low	College Budget	Short Term	High	PR
BCC-4	Provide public education and outreach on proper installation and/or use of backup power	N/A	All	1-5 5-1 5-3	BCC, OEM and local government	Medium	Low	College Budget	Short Term	High	PR

Notes:

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

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.

Potential Funding Sources:

CBDG = Community Development Block Grants

DEC = NY Department of Environmental Conservation

DHSES=Department of Homeland Security Emergency Services

EMPG = Emergency Management Planning Grant

EWP = Emergency Watershed Protection Grants (NRCS)

FMA = Flood Mitigation Assistance Grant Program (FEMA)

HLS = Homeland Security Programs

HMGP= Hazard Mitigation Grant Program (FEMA)

HMA = Hazard Mitigation Assistance (FEMA)

NOAA= National Oceanic and Atmospheric Association

PDM = Pre-Disaster Mitigation Grant Program (FEMA)

RFC = Repetitive Flood Claims Grant Program

SHSP = State Homeland Security Program Grant

Timeline:

Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.

DOF = Depending on funding.

Notes (for Mitigation Project Type):

1. PP=Prevention and Property Protection: Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also 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 planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations and acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PE=Public Education and Awareness: 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 school-age and adult education programs.

3. NR=Natural Resource Protection: 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.
4. SP=Structural Projects: 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.
5. ES=Emergency Services: 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.

K.) PRIORITAZATION OF MITIGATION INITIATIVES

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits equal or exceed Costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can Project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
BCC-1	1	High	Low – High (for 5 year update)	Yes	Yes	No	High
BCC-2	3	Medium	Medium	Yes	Yes	No	Medium
BCC-3	3	Medium	Low	Yes	No	Yes	High
BCC-4	3	Medium	Low	Yes	No	Yes	High

Explanation of Priorities

High Priority = A project that meets multiple objectives (i.e., multiple hazards), benefits exceeds cost, has funding secured or is an on-going project and project meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM) programs. High priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, benefits exceeds costs, funding has not been secured but project is grant eligible under, HMGP, PDM or other grant programs. Project can be completed in the short term, once funding is completed. Medium priority projects will become high priority projects once funding is secured.

Low Priority = Any project that will mitigate the risk of a hazard, benefits do not exceed the costs or are difficult to quantify, funding has not been secured and project is not eligible for HMGP or PDM grant funding, and time line for completion is considered long term (1 to 10 years). Low priority projects may be eligible other sources of grant funding from other programs. A low priority project could become a high priority project once funding is secured as long as it could be completed in the short term.

L.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None identified at this time.

M.) HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map for both Burlington County College campuses can be viewed in the Mount Laurel and Pemberton Township annexes. The Planning Area maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.

N.) ADDITIONAL COMMENTS

No additional comments at this time.