



Burlington County Multi-Jurisdictional All Hazards Mitigation Plan Update



Volume II

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Prepared By:
Tetra Tech Inc.
1000 The American Road
Morris Plains, NJ 07950



SECTION 8: PLANNING PARTNERSHIP

BACKGROUND

Section 201.6.a (4) of Chapter 44 of the Code of Federal Regulations (44CFR) states: “Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.” The Federal Emergency Management Agency (FEMA) and New Jersey Office of Emergency Management (NJOEM) both encourage multi-jurisdictional planning. Therefore, in the preparation of the Burlington County Hazard Mitigation Plan (HMP), a Planning Partnership was formed to pursue grant funding for the plan and to meet requirements of the federal Disaster Mitigation Act of 2000 (DMA) for as many eligible local governments in Burlington County as possible.

The DMA defines a local government as follows: “Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

Burlington County solicited the participation of all townships and boroughs in the County at the commencement of this project. Townships and Boroughs interested signed a “Letter of Intent” and/or a resolution committing their participation and resources to the update of the Burlington County Multi-Jurisdictional Multi-Hazards Mitigation Plan. All jurisdictions in the County decided to participate in the plan update process in addition to one special purpose district, the Burlington Community College (Table 8-1).

Table 8-1. Participating Jurisdictions in Burlington County

Jurisdictions		
Bass River (T)	Fieldsboro (B)	Pemberton (B)
Beverly (C)	Florence (T)	Pemberton (T)
Bordentown (C)	Hainesport (T)	Riverside (T)
Bordentown (T)	Lumberton (T)	Riverton (B)
Burlington (C)	Mansfield (T)	Shamong (T)
Burlington (T)	Maple Shade (T)	Southampton (T)
Chesterfield (T)	Medford (T)	Springfield (T)
Cinnaminson (T)	Medford Lakes (B)	Tabernacle (T)
Delanco (T)	Moorestown (T)	Washington (T)
Delran (T)	Mt. Holly (T)	Westampton (T)
Eastampton (T)	Mt. Laurel (T)	Willingboro (T)
Edgewater Park (T)	New Hanover (T)	Woodland (T)
Evesham (T)	North Hanover (T)	Wrightstown (B)
	Palmyra (B)	Burlington Community College

(B) = Borough, (C) = City, (T) = Township

Planning Partner Expectations

The Planning Committee agreed to the following list of expectations:

- Review 2008 Plan goals and re-establish Plan Update goals and objectives;
- Establish a timeline for completion of the Plan;
- Ensure that the Plan meets the requirements of DMA 2000 and FEMA and NJOEM guidance;
- Solicit and encourage the participation of regional agencies, a range of stakeholders, and citizens in the Plan development process;
- Assist in gathering information for inclusion in the Plan, including the use of previously developed reports and data;
- Organize and oversee the public involvement process;
- Develop, revise, adopt, and maintain Volume I of the Plan in its entirety and the local jurisdictional annex in Volume II.

Jurisdictional Annex Templates

Jurisdictional annex templates were created to help the Planning Committee prepare their jurisdiction-specific annexes and ensure all criteria of Section 201.6 of 44CFR would be met, based on the partners' capabilities and mode of operation. The template and detailed instructions were designed to lead each partner through a series of steps that would generate the DMA-required elements that are specific for each partner. The designated point-of-contact for each participating jurisdiction, as well as the County, was asked to complete the template using the detailed instructions, guidance from the consultant and technical assistance provided at the jurisdictional annex workshop (discussed below). The templates and their instructions can be found in Appendix F.

Workshop

A jurisdictional annex workshop was held on July 25, 2013 for the Mitigation Planning Committee. Attendance at this workshop was highly recommended for plan participants. This workshop was developed and presented by the consultant (Tetra Tech). At the workshop, a summary of the hazard mitigation planning process was provided as well as an in-depth review of how to update the existing mitigation strategy and how to build a strong mitigation strategy and actions. In addition, Tetra Tech provided an overview of each section in the annex with specific focus on correlating the municipal vulnerability assessments with the mitigation strategy. The workshop was designed to be instructional, but also allow for open discussion and questions. In addition, personalized technical assistance was available and provided to each jurisdiction, as needed. Topics discussed during this session included:

- DMA 2000 overview
- Jurisdictional Annex Template Tools
- Jurisdictional Annex Template
 - Overview
 - Risk ranking
 - Cost/benefit review
 - How to address vulnerable areas and facilities
 - Implementation into land use process
 - NFIP administrator summary report

- o 2008 mitigation strategy update
- o Establishment of strong mitigation projects

The results of the risk ranking for the County as a whole and each jurisdiction were provided to each participating jurisdiction on a CD for reference. This was a collaborative effort by all workshop attendees. The rank (high, medium, low) of each risk for each jurisdiction was based on probability of occurrence and estimates of potential dollar losses to structures vulnerable to the hazard. Maps illustrating hazard areas and tables estimating exposure and losses were provided to each jurisdiction as a tool, in addition to the risk assessment for review and comment.

Benefit/Cost Review

Each jurisdiction's annex includes an action plan of prioritized initiatives to mitigate natural hazards. Section 201.6.c.3iii of 44CFR requires the prioritization of the action plan to emphasize the extent to which benefits are maximized according to a cost/benefit review of the proposed projects and their associated costs. In addition, the County and each jurisdiction was requested to provide a project status for each of the projects included in the 2008 HMP as well as summarizing how the 2008 plan was integrated into their planning process.

As part of jurisdiction annex template completion, the Planning Committee was asked to weigh the estimated benefits of a project versus the estimated costs to establish a parameter to be used in the prioritization of a project. This benefit/cost review was qualitative; that is, it did not include the level of detail required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. This qualitative approach was used because projects may not be implemented for up to 10 years, and the associated costs and benefits could change dramatically in that time. Each project was assessed by assigning subjective ratings (high, medium, and low) to its costs and benefits, as follows:

Table 8-2. Benefit/Cost Review

Costs	
High	Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (e.g., bonds, grants, and fee increases).
Medium	The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
Low	The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing program.
Benefits	
High	Project will have an immediate impact on the reduction of risk exposure to life and property.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
Low	Long-term benefits of the project are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly. For many of the initiatives identified in the action plans, participating jurisdictions may seek financial assistance under FEMA's HMGP or PDM programs. Both of these programs require detailed benefit/cost analysis as part of the application process. These analyses will be performed when funding applications are

prepared, using the FEMA model process. The Planning Committee is committed to implementing mitigation strategies with benefits that exceed costs. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Planning Committee reserves the right to define “benefits” according to parameters that meet its needs and the goals and objectives of this plan.

Completion of the Planning Process

All participating townships and boroughs in the County completed the planning and annex-preparation process. Completed jurisdictional annexes are presented in Section 9.

9.1 Burlington County

This section presents the jurisdictional annex for Burlington County.

9.1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Kevin Tuno, OEM Coordinator Address: 1 Academy Drive, Westampton, NJ Phone Number: (609) 518-7200 Fax Number: (609) 518-7214 E-mail Address: ktuno@co.burlington.nj.us	Name: T. Steve King, Deputy OEM Address: 1 Academy Drive, Westampton, NJ Phone Number: (609) 518-7200 Fax Number: (609) 518-7214 E-mail Address: sking@co.burlington.nj.us

9.1.2 PROFILE

Please refer to Section 4, Volume I of this Plan for details on Burlington County's population, location, climate, history, growth and development.

9.1.2.1 Growth/Development Trends

Burlington County's growth and development trends are discussed in Section 4. The figures at the end of this annex illustrates the location of the identified potential future development and the hazard areas of the County.

9.1.3 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	Total damages including emergency protective measures, debris removal and structures \$125,000
Fire	FM-2695	Yes	May 15-19, 2007	Total damages including emergency protective measures \$25,000
Winter Storm	DR-1873	Yes	December 19-2009	Road closures/severely comprised roads due to record snowfall. Total damages including emergency protective measures totaled \$490,000.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Winter Storm	DR-1889	Yes	February 5-6, 2010	Total damages including emergency protective measures, debris removal and structures totaled \$500,000
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Road closures, damage due to flooding. Total damages including emergency protective measures, debris removal and structures exceeded \$5 million
Winter Storm	DR-1954	Yes	December 26-27, 2010	Total damages including emergency protective measures, debris removal and structures totaled \$450,000.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Total damages including emergency protective measures, debris removal and structures exceeded \$12 million
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Total damages including emergency protective measures, debris removal and structures exceeded \$1 million.

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.

9.1.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of Burlington County.

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: \$889,071,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$87,329,374 500-Year MRP: \$490,896,123 Annualized Loss: \$6,095,196	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$376,596,490 5% of GBS: \$1,882,982,450	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$35,027,000	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme \$28,598,560,000 Risk	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$23,068,842 2,500-Year MRP: \$540,226,257 Annualized Loss: \$489,790	Rare	6	Medium
Landslides	Not available	Rare	12	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.

9.1.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the County:

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

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

9.1.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to Burlington County.

Legal and Regulatory Capability			
Regulatory Tools (Codes, Ordinances, Plans)	Do you have this? (Y or N)	Enforcement Authority	Code Citation (Section, Paragraph, Page Number, Date of Adoption)
1) Building Code	N	Municipal Planning	NJAC 5:23-3, 14
2) Zoning Ordinance	N	Municipal Planning	-
3) Subdivision Ordinance	Y	Planning/Land Development	Per County Land Development Review Resolution; 2011
4) NFIP Flood Damage Prevention Ordinance	N	Participating Municipalities	-
4a) Cumulative Substantial Damages	N	Participating Municipalities	-
4b) Freeboard	N	Participating Municipalities	-
5) Growth Management	N		
6) Floodplain Management / Basin Plan	N	Municipal Planning	
7) Stormwater Management Plan/Ordinance	Y	NJDEP	NJDEP Rule N.J.A.C 7:8;
8) Comprehensive Plan / Master Plan/ General Plan	N		
9) Capital Improvements Plan	Y	Engineering	6 Year Capital Program; 2010- 2016
10) Site Plan Review Requirements	Y	Planning	County Land Development Resolution; 2011
11) Open Space Plan	Y	Resource Conservation Department	Parks, Recreation, and Open Space Master Plan; 2002
12) Stream Corridor Management Plan	-	-	-
13) Watershed Management or Protection Plan	Y	-	Watershed Management Plan for Rancocas Creek – “Clean and Plentiful Water: A Management Plan for the Rancocas Creek”
14) Economic Development Plan	N		
15) Comprehensive Emergency Management Plan	Y	OEM	Burlington County Emergency Operations Plan

Legal and Regulatory Capability			
Regulatory Tools (Codes, Ordinances, Plans)	Do you have this? (Y or N)	Enforcement Authority	Code Citation (Section, Paragraph, Page Number, Date of Adoption)
16) Emergency Response Plan	Y	OEM	Burlington County EMS and Fire Mutual Aid Plans
17) Post-Disaster Recovery Plan	Y	OEM	ESF 14 – Infrastructure Restoration and Long Term Recovery
18) Post-Disaster Recovery Ordinance	-	-	-
19) Real Estate Disclosure Requirement	N/A	-	-
20) Other (Special Purpose Ordinances such as critical or sensitive areas)	N/A	-	-

9.1.5.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to Burlington County.

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	County Engineering Department
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Engineering/staff of inspectors and licensed engineers
3) Planners or engineers with an understanding of natural hazards	Y	Engineering and Planning Board
4) NFIP Floodplain Administrator	N/A	The County does not have a requirement for a floodplain administrator.
5) Surveyor(s)	Y	Engineering division has a surveying section
6) Personnel skilled or trained in GIS applications	Y	MIS has a GIS Coordinator, Engineering and Planning Division have personnel skilled in GIS
7) Scientist familiar with natural hazards	Y	Health Department and Soil Conservation Staff
8) Emergency Manager	Y	OEM division has emergency managers
9) Grant Writer(s)	Y	Administrator's office has a dedicated grant specialist
10) Staff with expertise or training in benefit/cost analysis	Y	Engineering division has personnel trained in FEMA BCA

9.1.5.3 Fiscal Capability

The table below summarizes financial resources available to Burlington County.

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	YES
9) Withhold public expenditures in hazard-prone areas	YES
10) State mitigation grant programs	YES
11) Other State & Federal Transportation Funding Resource Conservation Department	YES

9.1.5.4 Community Classifications

The table below summarizes classifications for community program available to Burlington County.

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

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to County'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/>

9.1.6 MITIGATION STRATEGY

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

9.1.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.1.7. 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	
Phase I: Rabbit Run NBRC acquisition of residential properties		x	x			This project is still underway. Several homes have already been acquired and the county continues to allocate funds. Progress is slow due to limited staffing and disaster response and recovery.
Phase II: Ewansville Section NBRC acquisition of residential properties		x	x			This project is still underway. Several homes have already been acquired and the county continues to allocate funds. Progress is slow due to limited staffing and disaster response and recovery.
Phase III: East End Section NBRC acquisition of residential properties		x	x			This project is still underway. Several homes have already been acquired and the county continues to allocate funds. Progress is slow due to limited staffing and disaster response and recovery.
On-going acquisition and/or elevation of homes and properties in flood plains areas prone to repetitive flooding.		x	x			This initiative is a county supported program in conjunction with participating municipalities. The municipalities are the responsible party for implementing this project. The county provides funding and support after a municipality requests assistance.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Long-Term Stream cleaning of the North, South and Southwest branches of the Rancocas Creek Watershed		x	x			County Parks Division continues to support stream cleaning after federal disasters. This initiative remains a mitigation action item for the county.

9.1.6.2 Hazard Vulnerabilities Identified

It is estimated that in Burlington County, 21,740 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Approximately 19% of the county's total land is located within the 1% annual chance flood area.

There are 4,080 NFIP policies in the community and there are 1,795 policies located within the 1% annual chance flood area. FEMA has identified 106 Repetitive Loss (RL) properties including 9 Severe Repetitive Loss (SRL) properties in the municipality.

HAZUS-MH estimates that for a 1% annual chance flood, \$3,445,433,000 (5.5%) of the County's general building stock replacement cost value (structure and contents) will be damaged, 28,797 people may be displaced, 20,666 people may seek short-term sheltering, and an estimated 54,698 tons of debris could be generated.

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

NFIP Summary								
County	# 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)
Burlington	4,080	1,202	\$20,930,712	106	9	1,795	2,398	1,682

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 Burlington County. 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 filed provided by FEMA Region 2 (current as of Burlington County)
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH critical facility damage estimates for Burlington County are provided below.

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⁾
Municipal	Burlington (C)	EOC	X	X	8.0	12.2	480
BURLINGTON BRISTOL BRIDGE POLICE DEPT	Burlington City	Police	X	X	9.3	17.3	480

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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	
BURLINGTON CITY POLICE	Burlington City	Police	X	X	7.0	8.0	480	
NJSP MARINE POLICE	Burlington City	Police		X				
BULINGTON CITY FIRE DEPARTMENT	Burlington City	Fire	X	X	8.0	12.2	480	
BULINGTON CITY FIRE DEPARTMENT	Burlington City	Fire	X	X	8.0	12.2	480	
MITCHELL FIRE CO #3	Burlington City	Fire	X	X	9.4	17.5	480	
NEPTUNE HOSE CO #5	Burlington City	Fire	X	X	8.8	15.1	480	
NIAGARA HOSE CO 6	Burlington City	Fire	X	X	10.4	26.8	480	
ENDEAVOR EMERGENCY SQUAD	Burlington City	Fire		X				
ALL SAINTS SCHOOL	Burlington City	School	X	X	7.3	39.9	480	
WILBUR WATTS INTERMEDIATE SCHL	Burlington City	School	X	X	7.7	43.1	480	
HOLY LIGHT CHRISTIAN ACADEMY	Burlington City	School	X	X	5.3	28.8	480	
BURLINGTON BOARD OF EDUCATION	Burlington City	School	X	X	9.0	59.3	480	
BURLINGTON CITY HIGH SCHOOL	Burlington City	School	X	X	6.4	34.8	480	
ST MARY'S HALL-DOANE ACADEMY	Burlington City	School		X				
CAPTAIN JAMES LAWRENCE SCHOOL	Burlington City	School		X				
ELIAS BOUDINOT ELEMENTARY SCHL	Burlington City	School		X				

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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⁾
SAMUEL SMITH ELEMENTARY SCHOOL	Burlington City	School		X			
Home For Aged Women	Burlington City	Senior	X	X	23.8	31.1	
BURLINGTON CITY MUNICIPAL BUILDING	Burlington City	Municipal	X	X	22.7	27.5	
LUMBERTON FIRE CO #1	Lumberton Township	Fire	X	X	10.9	36.4	480
MAPLE SHADE RESCUE SERVICE	Maple Shade Township	Fire		X			
BURLINGTON COUNTY INSTITUTE OF TECH	Medford Township	School	X	X	6.1	32.9	480
CHALLENGER ELEMENTARY SCHOOL	Medford Township	School	X	X	5.6	30.2	480
CRANBERRY PINE ELEMENTARY SCHOOL	Medford Township	School	X	X	9.0	59.4	480
MOUNT HOLLY TWP POLICE DEPT	Mount Holly Township	Police		X			
BURLINGTON COUNTY COLLEGE	Mount Holly Township	School		X			
MOUNT HOLLY TOWNSHIP MUNICIPAL BUILDING	Mount Holly Township	Municipal		X			
TACONY PALMYRA BRIDGE POLICE DEPT	Palmyra Borough	Police	X	X	8.1	12.3	480
SHAMONG BOARD OF EDUCATION	Shamong Township	School		X			
SHAMONG TOWNSHIP SCHOOL DIST	Shamong Township	School		X			
VINCENTOWN EMERGENCY SQUAD	Southampton Township	Fire	X	X	7.6	10.4	480
Section B3 (17, 18, 29, 43)	Tabernacle Township	Fire	X	X	4.7	5.3	480

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 REGION	Washington Township	Police		X			
WASHINGTON TOWNSHIP MUNICIPAL BUILDING	Washington Township	Municipal		X			

Source: HAZUS-MH 2.1

Notes:

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

X = Facility located within the DFIRM boundary.

DFIRM = Digital Flood Insurance Rate Map

NA = Not available

Twp = Township

(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).

(2) 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.

9.1.7 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 County priorities.

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 1	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: 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	Existing	Flood	2-1 2-2 3-1 4-1 4-2	County of Burlington Public Works and Public Safety	High	High (~\$2.3M)	FEMA FMA, HMGP or PDM Grant and BC Existing Operating Budget for local share	DOF	Medium	NR
County - 2	Obtain and install backup power at vital county critical facilities	Existing	All Hazards	1-1 1-2 3-1 3-2	BC Facilities and Services; BC Engineering ; BC OEM	High	Medium (~\$80K)	HMGP or PDA grant or county operating budget	Short	High	PP
County - 3	Join NOAA "Storm Ready"	N/A	Severe Storm	1-1 5-1	BC Engineering , BC OEM	Medium	Low	County Operating Budget	Short	Medium	PE

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 4	Promote "Firewise" throughout the county	N/A	Wild land Fires	1-1 5-1	BC OEM, Participating Communities in BC	Medium	Low	County Operating Budget	Short	High	PE, PP
County -5	Support local efforts to incorporate hazard mitigation into Local Master Plans/Zoning	N/A	All	1-1 3-1	BC Planning	Medium	Low	County Operating Budget	Short	Low	PR
County - 6	Promote CRS program throughout the county	Both	Flooding	1-1 1-5 2-1 2-2 3-1 4-1 5-1	BC Engineering ; NFIP Participating Communities in BC	Medium	Low	County Operating Budget	Short	High	PR
County - 7	Obtain/record/maintain historical hazard data such as: flood high water marks, road closures, wild fires, requests for assistance, loss data etc.	Existing	Flooding, Wildfire	1-1 1-3 2-1 3-1	BC Engineering ; BC OEM	Low	Medium	HMGP or PDA grant or county operating budget	Long	High	PR
County - 8	Develop public info. strategy for dissemination of hazard information before an event	Both	All	1-1 5-1 5-2 5-3	BC PIO; BC Engineering , BC OEM; PIO	High	Medium	County operating budget	Short	Medium	PE
County - 9	Evaluate the adoption of "no Adverse Impact" land use policies through a planning framework.	Both	Flooding	1-1 1-4	BC Planning	Medium	Low	County operating budget	Short	High	PP

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 10	Provide technical information and guidance on hazards & risks to municipalities and the public	Existing	All	1-1 5-1 5-2 5-3	BC OEM; BC Engineering ; BC PIO	High	Medium	County Operating Budget	Long	High	PE
County - 11	Retrofit critical river crossings including roads, bridges and culverts over floodplains on county roads	Existing	Flooding	1-1 2-1 2-2 3-1	BC Engineering ; Traffic Safety; Public Works	High	High	FEMA FMA, HMGP or PDM Grant and BC Existing Operating Budget for local share	Long,	Medium	PP
County - 12	Create and enhance mutual aid agreements between law enforcement, municipal public works and county public works departments	Existing	All	1-1 3-1 3-2	BC Public Works; BC OEM	Medium	Medium	County Operating Budget	Short	Medium	PR
County - 13	Improve dissemination of public information on imminent hazard threats	Existing	All	1-1 5-1 5-2 5-3	BC OEM; BC Engineering ; BC PIO	High	Medium	County Operating Budget	Short	Low	PE
County - 14	Keep a geo-referenced list and information on critical facilities and infrastructure components	Existing	All	1-1 1-2 3-2	BC GIS; BC Prosecutor; BC Engineering ; BC OEM	Medium	Medium	County Operating Budget	Short	Low	PR
County - 15	Develop post disaster action plan that includes debris removal components	Existing	Flooding, Severe Storms	1-1 2-1 3-1	BC Public Works; BC OEM	Low	Medium	HMGP, FMA or PDM grant	Short	Medium	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 16	Map urban/wild land interface areas	Both	Wildfire	1-1 1-4 1-5	BC GIS; BC OEM	Medium	Medium	DHS Grant	Short	Low	PR PP
County - 17	Identify, evaluate & improve evacuation routes for all hazards of concern.	Existing	All	1-1 1-5	BC Traffic; BC Engineering; BC OEM	High	Medium	DHS Grant	Short	Low	ES
County - 18	Create data sets for reverse 911 for flooding, urban/wild land interface & vulnerable populations	Existing	Flooding, Wildfire, Extreme Temperatures	1-1 1-5	BC OEM; BC GIS; BC PIO; BC Office of Aging	Medium	Low	DHS Grant	Short	Low	ES
County - 20	Increase participation in multi-jurisdictional annual progress reports and updates of BC All Hazards Mitigation Plan, if necessary.	Both	All	1-1 1-4 2-1	BC Engineering; BC OEM; BC Planning; BC Health; Red Cross; BC Prosecutor; BC Public Works	Low	Low	County Operating Budget	Long	High	PR
County - 21	Enhance the building inventory to include structure values for future use of the HAZUS program	Both	Floods, Severe Storms, Severe Winter Storms and Earthquake	1-1 1-4 2-1	BC GIS	Medium	Medium	DHS Grant	Long	Low	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 22	Provide higher resolution digital elevation model for future use of the HAZUS program	Both	Floods, Severe Storms, Severe Winter Storms and Earthquake	1-1 1-3 1-4	BC GIS	Medium	Medium	DHS Grant	Long	Low	PR
County - 23	Retrofit structures located in flood-prone areas to protect structures from future damage, especially those known to be identified as 'repetitive loss"	Existing	Floods	2-1 2-2 3-1 4-1 4-2	BC Planning; BC Engineering ; BC Community Development	Medium	Low	FEMA FMA,SRL, RFC, HMGP or PDM Grant and County Operating Budget for cost share	Long	Medium	PP
County - 24	Provide assistance to municipalities in obtaining backup power at vital critical facilities	Both	All	1-2 1-5 3-2	BC Facilities and Services; BC Engineering ; BC OEM; Municipalities	High	Medium	FEMA FMA,SRL, RFC, HMGP or PDM Grant and County Operating Budget for cost share	Long	Low	PP SP
County - 25	Encourage the use of higher regulatory standards in codes such as: the Local Floodplain Management Ordinance and, Zoning code	New	All	1-1 1-4	BC OEM, Planning, Engineering , GIS	Medium	Low	County Operating Budget	Long	Low	PR
County - 26	Replace inadequate portions of drainage systems on County roads	Existing	Flood, Severe Winter Storm	1-1 1-3 2-1 2-2 3-1	BC Engineering	High	High	County Capital Budget	Long	Low	PP

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 27	Develop environmental monitoring component for Burlington County Emergency Operations Plan	Both	Flood, Earthquake, Wildfire, Drought	1-1 1-4 3-1 4-1	BC OEM; BC Health Department ; BC DPW	Medium	Medium	DHS grant	Short	Low	NR
County - 28	Retrofit vulnerable critical facilities and infrastructure	Existing	All	1-1 1-2 3-1	BC OEM; BC Engineering	Medium	High	FEMA Grant Funding County Operating Budget,	Long term, DOF	Low	PR
County - 29	Document the impacts of all hazards on land use decisions, especially in terms of the placement of critical facilities/infrastructure and high density development.	Both	All	1-1 1-4	BC Planning	Low	Low	County Operating Budget	Short term	High	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 30	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 the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. • 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 email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. • Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	HMA programs with local or county match	Short Term	High	PE
County - 31	Support municipalities with incorporation of ordinances and/or zoning restrictions to control and mitigate future development in hazard areas, specifically as identified in Section 5.	N/A	All Hazards	1-1 1-4	Municipality with support from BC OEM, NJOEM and FEMA	Medium	Medium	County Operating Budget	Short	Medium	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 32	Develop programs/procedures to capture and archive loss data from events. Examples include: - Record location and length of roadway closures; - Develop a database of residential and commercial property damage, including permit history for such repairs; - High water marks, perhaps painting phone poles with high water marks and or regulatory Base Flood Elevations (BFES).	N/A	All Hazards	1-1 1-3 3-1 4-1	Municipality with support from BC OEM, NJOEM and FEMA	Medium	Medium	County Operating Budget	Short	Medium	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 33	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: - Support the performance of enhanced risk and vulnerability assessments for hazards of concern. - Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.	N/A	All Hazards	1-1 1-2 3-2	BC OEM; Hazard Mitigation Plan Coordinator , BC GIS	Medium-High	Medium-High	FEMA Mitigation Grant Programs with county match	Long Term DOF	Medium	PR
County - 34	Support ongoing updates of Comprehensive Emergency Management Plans	New and Existing	All Hazards	1-1 2-1	Municipality with support from BC OEM and NJ OEM	Low	Low	County Operating Budget	On-going	High	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 35	Foster the creation, enhancement and maintenance of Mutual Aid Agreements between neighboring communities for continuity of operations	N/A	All Hazards	3-2	Municipality with support from BC OEM, NJOEM, FEMA and surrounding communities and counties	Medium	Low	County Operating Budget	Short Term	High	PR, ES
County - 36	Identify and develop agreements with entities that can provide support with FEMA/NJOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/NJOEM paperwork compilation, submissions, record-keeping	N/A	All Hazards	1-1 3-1	Municipality with support from BC OEM, NJOEM and FEMA	Medium	Medium	County Operating Budget	Short Term	Medium	PR, ES
County - 37	Work with regional agencies (i.e. County and NJOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	N/A	All Hazards	1-1	Municipality with support from BC OEM, NJOEM and FEMA	Medium	Medium	County Operating Budget, FEMA HMA and HLS grant programs	Short-Long Term DOF	Medium	PR
County - 38	Continue to support the implementation, monitoring, maintenance, and updating of this Plan (through participation in the 5 year Plan Update)	New and Existing	All Hazards	1-4	Municipality with support from Planning Partners, BC OEM, NJOEM, FEMA	High	Low – High (for 5 year update)	County Operating Budget, FEMA planning grants	On-going	High	PR
County - 39	Promote the participation of Floodplain Administrators within the planning process and other activities.	N/A	Flood	1-1 1-3 3-1	Municipality with support from BC OEM, County Engineers, NJOEM and FEMA	Medium	Medium	County Operating Budget	Short	Medium	PR

Proposed Hazard Mitigation Initiatives											
Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
County - 40	Incorporate floodplain and RiskMAP products into the County GIS system and make available for municipalities.	Both	Flood	1-1 1-3 3-1	County GIS and BC OEM	High	Medium	County Budget	Short	Medium	PR
County - 41	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 5-1 5-3	BC OEM with support from Municipal Clerk and municipal OEM	Medium	Low	County Operating Budget	Short	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
K	Thousand
M	Million
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 reappropriation 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.

9.1.8 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)
County - 1	5	High	High	Yes	Yes	No	High
County - 2	4	High	Medium	Yes	Yes	Yes	Medium
County - 3	2	Medium	Low	Yes	No	Yes	Medium
County - 4	2	Medium	Low	Yes	No	Yes	High
County - 5	2	Medium	Low	Yes	Yes	Yes	Low
County - 6	7	Medium	Low	Yes	No	Yes	High
County - 7	4	Low	Medium	Yes	Yes	Yes	High
County - 8	4	High	Medium	Yes	No	Yes	Medium
County - 9	2	Medium	Low	Yes	No	Yes	High
County - 10	4	High	Medium	Yes	No	Yes	High
County - 11	4	High	High	Yes	Yes	Yes	Medium
County - 12	3	Medium	Medium	Yes	No	Yes	Medium
County - 13	4	High	Medium	Yes	No	Yes	Low
County - 14	3	Medium	Medium	Yes	No	Yes	Low
County - 15	3	Low	Medium	Yes	Yes	No	Medium
County - 16	3	Medium	Medium	Yes	Yes	No	Low
County - 17	2	High	Medium	Yes	Yes	No	Low
County - 18	2	Medium	Low	Yes	Yes	No	Low
County - 19	1	Low	Medium	Yes	No	Yes	Low
County - 20	3	Low	Low	Yes	No	Yes	High
County - 21	3	Medium	Medium	Yes	Yes	No	Low
County - 22	3	Medium	Medium	Yes	Yes	No	Low
County - 23	5	Medium	Low	Yes	Yes	No	Medium
County - 24	3	High	Medium	Yes	Yes	No	Low
County - 25	2	Medium	Low	Yes	No	Yes	Low
County - 26	5	High	High	Yes	No	Yes	Low
County - 27	4	Medium	Medium	Yes	Yes	No	Low
County - 28	3	Medium	High	Yes	Yes	Yes	Low
County - 29	2	Low	Low	Yes	No	Yes	High
County - 30	3	Medium	Medium	Yes	Yes	Yes	High
County - 31	2	Medium	Medium	Yes	No	Yes	Medium
County - 32	4	Medium	Medium	Yes	No	Yes	Medium

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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)
County - 33	3	Medium-High	Medium-High	Yes	No	Yes	Medium
County - 34	2	Low	Low	Yes	No	Yes	Medium
County - 35	1	Medium	Low	Yes	No	Yes	High
County - 36	2	Medium	Medium	Yes	No	Yes	High
County - 37	1	Medium	Medium	Yes	No	Yes	Medium
County - 38	1	High	Low – High	Yes	No	Yes	Medium
County - 39	3	Medium	Medium	Yes	Yes	No	High
County - 40	3	High	Medium	Yes	Yes	No	Medium
County - 41	3	Medium	Low	Yes	No	Yes	Medium

Notes:

N/A = Not applicable

9.1.8.1 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 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.

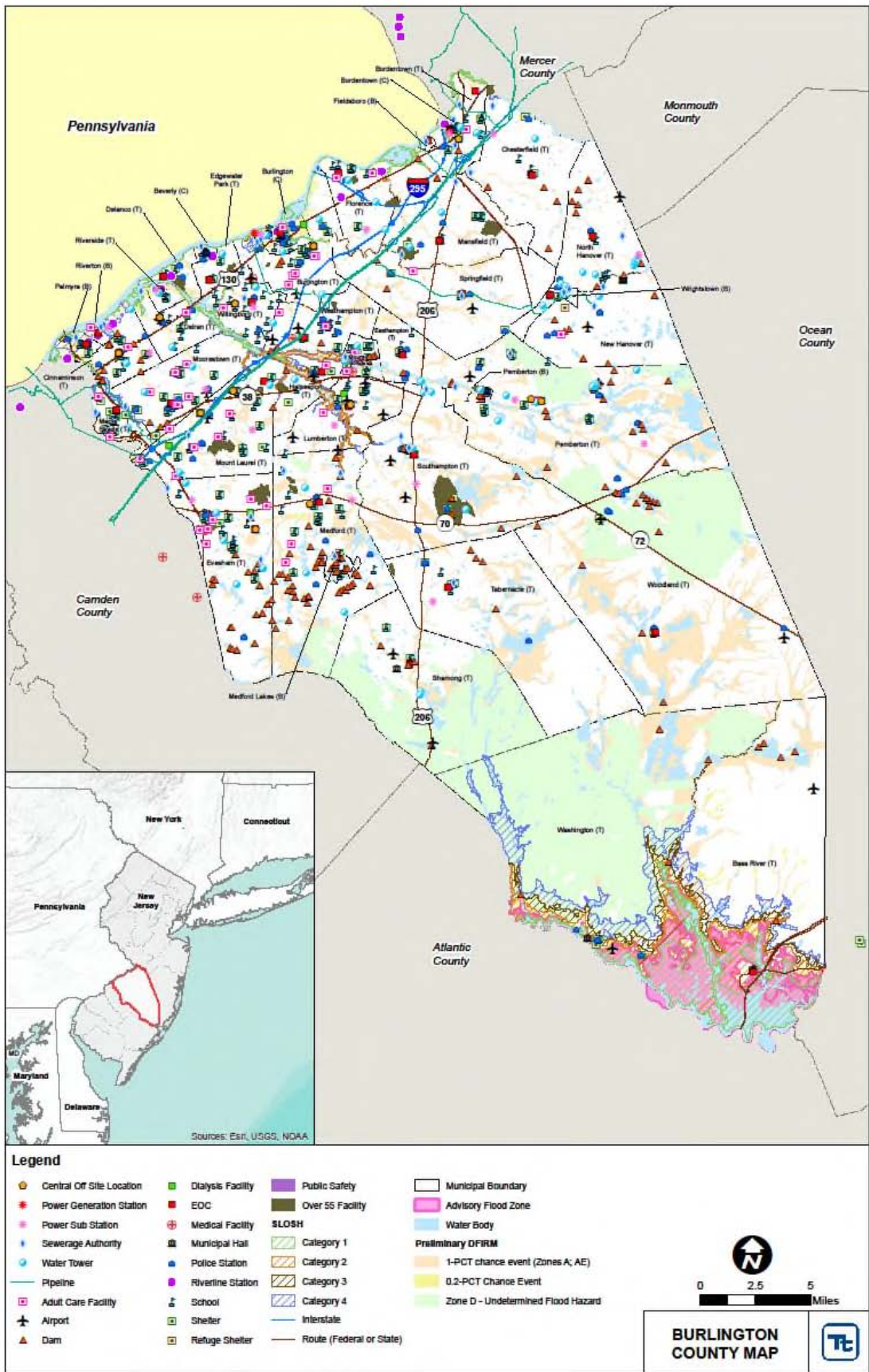
Low Priority = A project that will mitigate the risk of a hazard, where the potential benefits do not exceed the costs or have benefits that are difficult to quantify. Funding for low-priority projects has not been secured and these projects are not eligible for HMGP or PDM grant funding. The timeline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

9.1.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Burlington County has no additional risk vulnerabilities that need to be addressed at this time.

9.1.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within Burlington County 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 Burlington County has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.



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

It is the intention of Burlington County to incorporate mitigation planning as an integral component of daily County operations. The following table contains a list of planning mechanisms that have been or will be incorporated into County 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
Comprehensive Land Use Plan When applicable, the County 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
Land Development Review Resolution and Public Works Handbook When updating County Resolution and Handbook hazard mitigation will be a priority.		x
Capital Improvement Planning The County will establish a protocol to review current and future projects for hazard vulnerability. The County will incorporate hazard-resistant construction standards into the design and location of projects.		x
Day-to-Day Operations The County will incorporate hazard mitigation actions in daily operations and all projects.		x
County Budget Adopted annually, the County 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
Open Space Plan		x

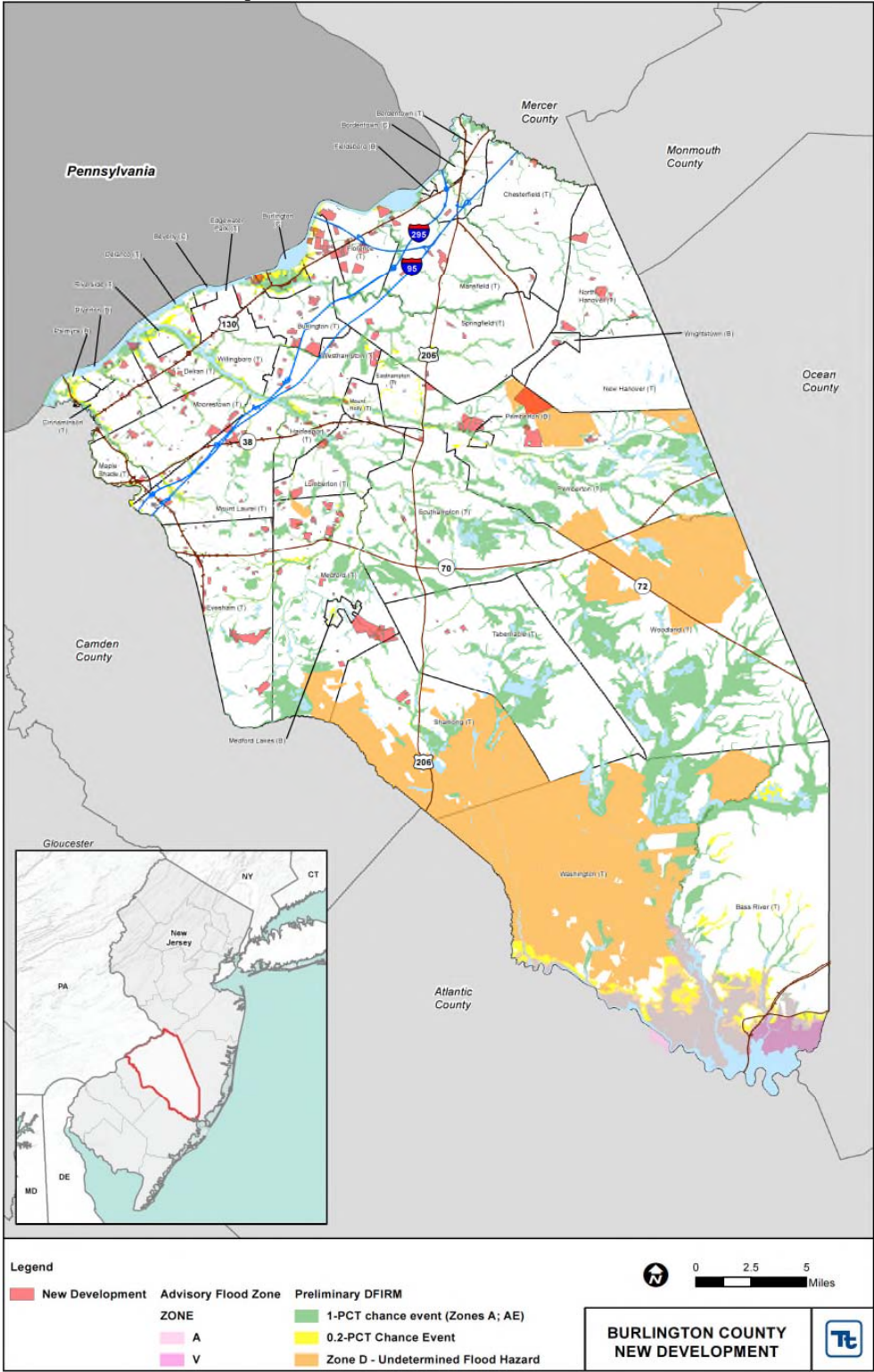
9.1.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.1.12 NFIP ADMINISTRATOR INPUT

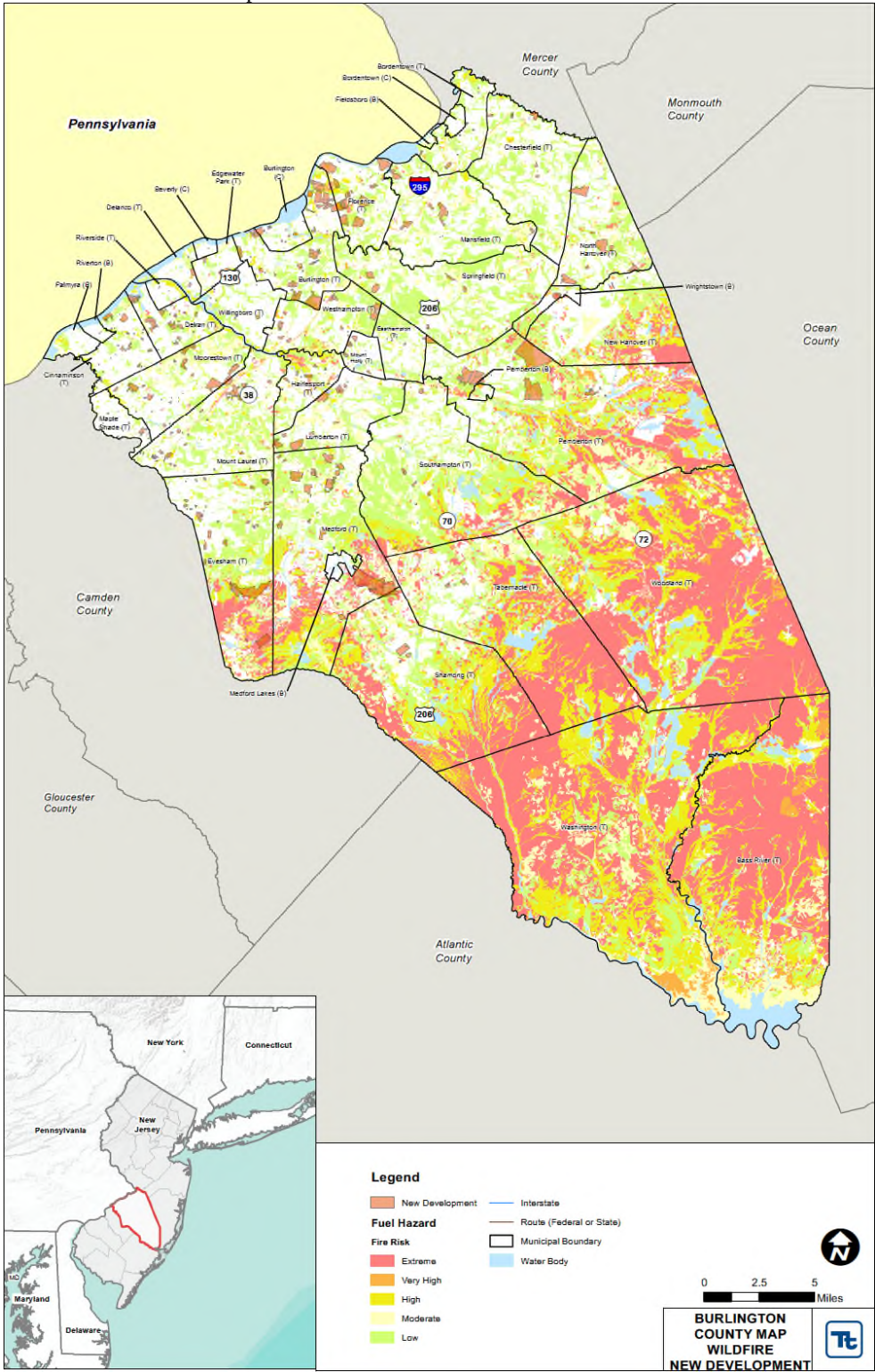
(Not applicable.)

Figure 9.1-1. Potential Future Development and Flood Hazard Areas



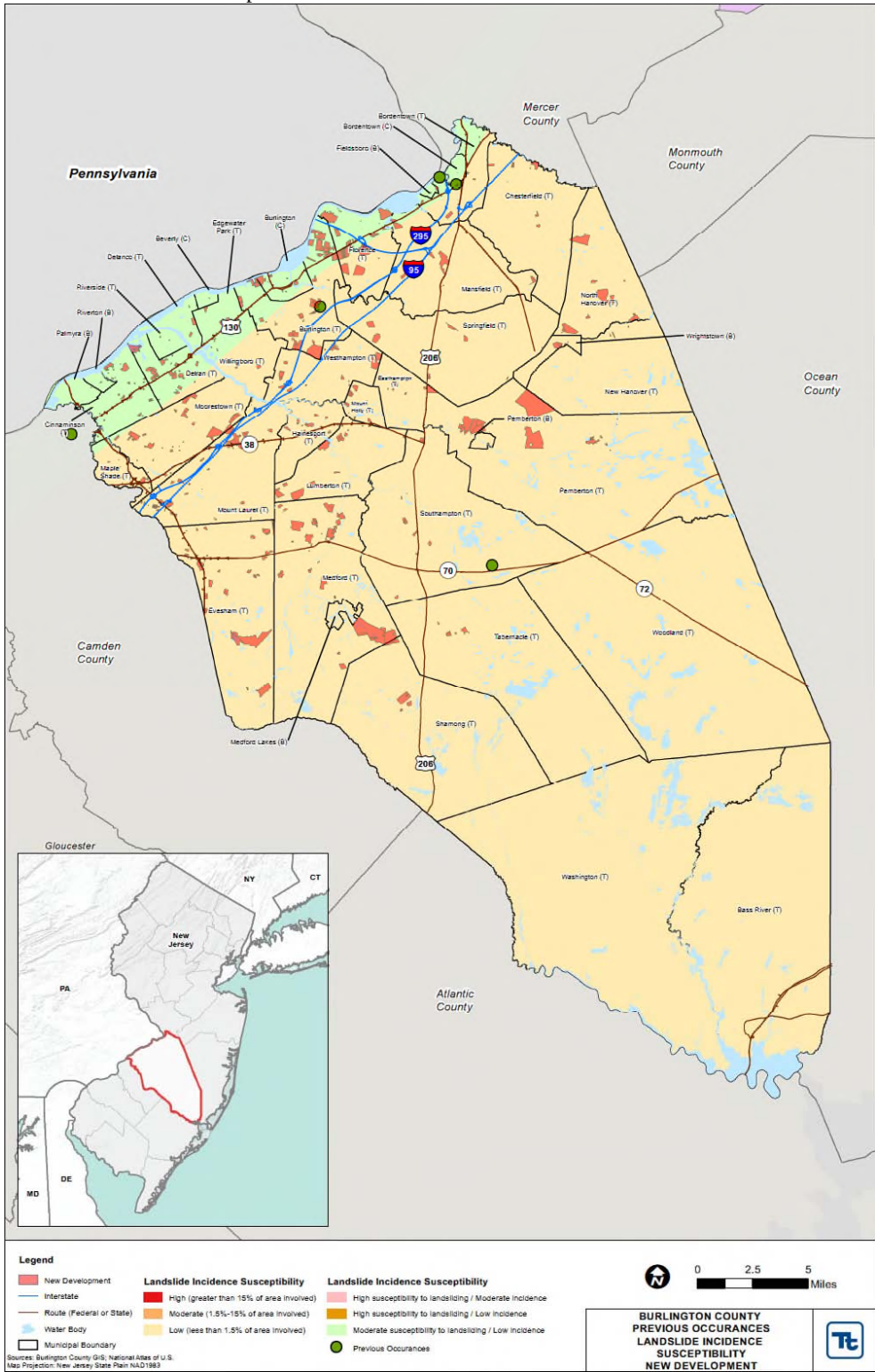
Source: BCGIS 2013

Figure 9.1-2. Potential Future Development and Wildfire Hazard Areas



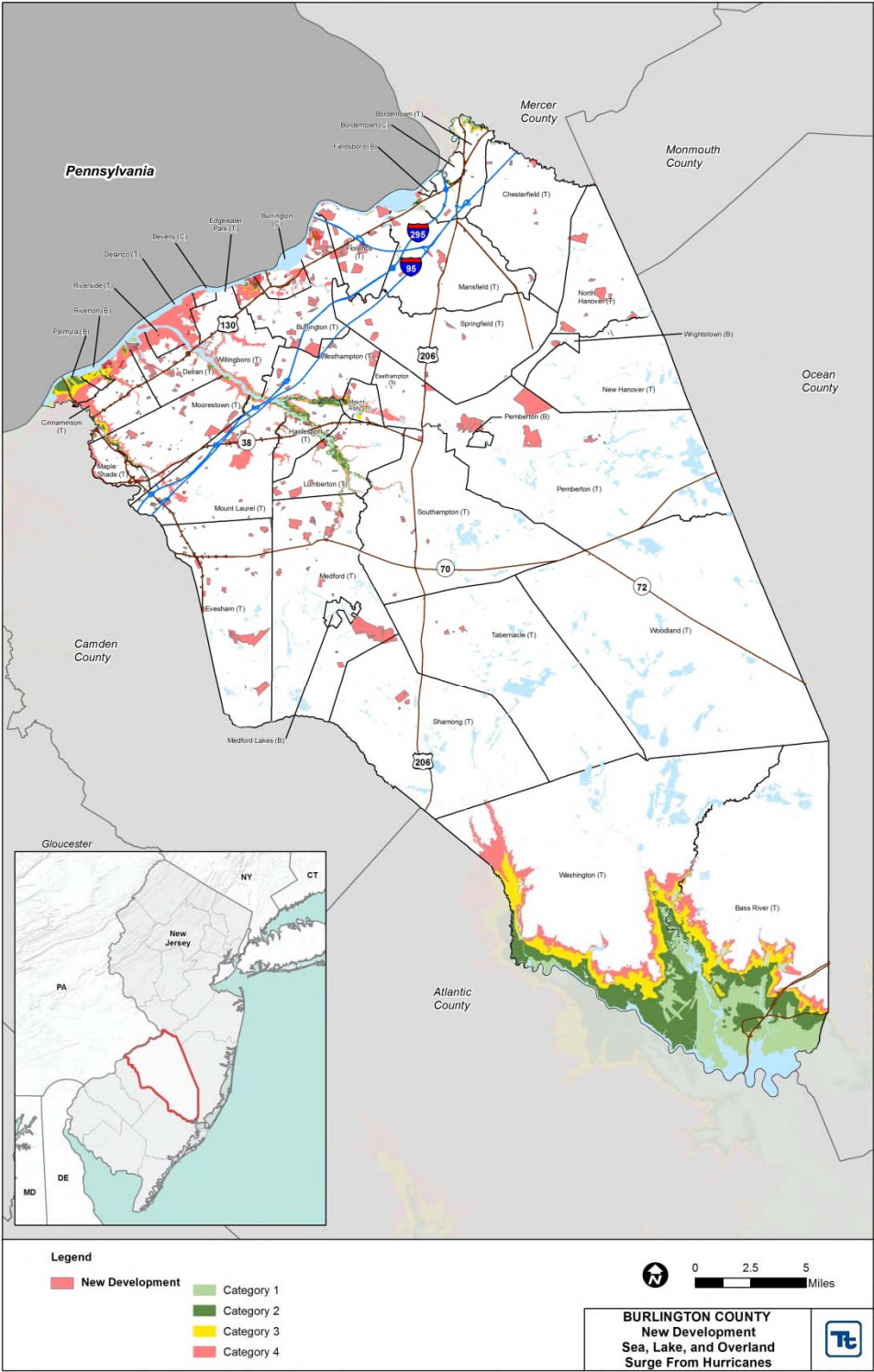
Source: BCGIS 2013

Figure 9.1-3. Potential Future Development and Landslide Hazard Areas



Source: BCGIS 2013

Figure 9.1-4. Potential Future Development and Storm Surge Hazard Areas



Source: BCGIS 2013

9.2 Township of Bass River

This section presents the jurisdictional annex for the Township of Bass River

9.2.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: David Cope Title: Emergency Management Coordinator Address: 161 Leektown Road, Egg Harbor, NJ 08215 Phone Number: (609) 839-9830 Fax Number: (609) 296-3458 E-mail Address: COPE2771@aol.com	Name: Amanda Somes Title: Municipal Clerk Address: PO Box 307, New Gretna, NJ 08224 Phone Number: (609) 296-3337 Ext. 6 Fax Number: (609)296-3458 E-mail Address: bassriverclerk@comcast.net

9.2.2 PROFILE

9.2.2.1 Population

The population of the Township of Bass River is estimated to be 1,443, based on information gathered during the 2010 U.S. Census.

9.2.2.2 Location

Bass River Township covers 72 square miles on the eastern edge of Burlington County and is bounded to the north, northwest, and west by Washington Township, northeast by Woodland (Township). To the east and southeast, Bass River Township is bordered by the Ocean County, New Jersey municipality of Little Egg Harbor Township. To the south and southwest, Bass River Township is bordered by the Atlantic County, New Jersey municipalities of Galloway Township and Port Republic, respectively. The Township encompasses the historic and geographic areas of Martha, Harrisville, Calico, and Sim Place.

9.2.2.3 Brief History

Bass River Township as a political entity was created by an act of the legislature of the State of New Jersey on March 30, 1864. It contained a part of Washington Township but most of its territory was taken from Little Egg Harbor Township.

The name is derived from Bass River which rises in the northeastern part of the township. The first settlement appears to have been made on Daniel Mathis' Island on the east bank of Bass River in 1713. The early settlers were for the most part Quakers who came from England. They bought large tracts of land upon which they built their homes and farms. They were resourceful, independent people, skilled in hunting, fishing, blacksmithing, coopering, carpentering, tanning and shoemaking. The women spun wool and flax, made the dye for the yarn and wove it into cloth for bedding and wearing apparel. Many persons living in Bass River Township at the present time are descended from the early settlers. Some still possess articles made from the homespun yarn of their ancestors.

During the early years of Bass River Township, residents of the community partook in a multitude of industrial and agricultural efforts to maintain their livelihood. These efforts included ironwork, paper

production, charcoal production, lumbering, salt hay harvesting, boat building, cultivating cranberries and blueberries, fishing, and mossing.¹

9.2.2.4 Governing Body Format

Bass River Township is governed by a Commission Form of Government. Voters elect three Commissioners at-large, nonpartisan, every 4 years. The Mayor is elected by the Board of Commissioner at reorganization for a 4-year term. The Mayor presides over Board of Commissioners.

This three-member governing body is empowered to enact local ordinances, to levy municipal taxes and conduct the affairs of our community. Each Commissioner acts as department head with no single chief executive. In almost all cases, it can review and approve the actions of other Bass River Township committees and agencies. The Board of Commissioners conducts all of its business during monthly meetings open to the public.

All Legislative powers of the Township are exercised by the Board of Commissioners. These powers can take forms of a resolution, ordinance, or proclamation.²

9.2.2.5 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 9.2.10) 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
144 N. Maple Ave.	Residential	1	144 N. Maple Ave.	50,1	Flood	Pending
39 Robinson Rd.	Residential/ Farm	1	39 Robinson Rd.	2,2	Flood/ Elevation	Pending
53 N. Maple Ave.	Residential	1	53 N. Maple Ave.	57,31	Flood / Elevation	Pending
180 N. Maple Ave.	Residential	1	180 N. Maple Ave.	50,8	Elevation	Pending
1917 Route 542	Residential	1	1917 Route 542	57,70	Flood	Pending

¹ http://www.bassriverhistory.org/uploads/6/8/7/1/6871754/bass_river_history.pdf

² <http://www.bassriver-nj.org/commission-form-of-government.html>

9.2.3 NATURAL HAZARD EVENT HISTORY SINCE 2008

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 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	All of Bass River Township. sustained slight damage during this Nor'Easter. The Township experienced road closures and trees down due to flooding and wind.
Fire	FM-2695	Yes	May 15-19, 2007	Heavy forest damage no structures damaged.
Winter Storm	DR-1873	Yes	December 19-2009	Electric lines down causing outages.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Electric lines down causing outages. Local roads were closed due to storm.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Road closures due to flooding which includes County Rd 542 and Maple Ave.
Winter Storm	DR-1954	Yes	December 26-27, 2010	Clear and sanded roads.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	All of Bass River Township sustained very little damage during Irene, flooding and power outages were throughout Bass River. Road closures included County Rd. 542, County Rd. 679, and Maple Ave.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	All of Bass River Township sustained some damage during Sandy. Structures/property and infrastructure damage reported.

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.

9.9.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$1,547,000	Frequent	33	High
Severe Storm	100-Year MRP: \$154,318 500-Year MRP: \$2,962,003 Annualized Loss: \$37,847	Frequent	48	High
Severe Winter Storm	1% of GBS: \$1,012,570 5% of GBS: \$5,062,850	Frequent	33	High ^h
Coastal Erosion	RCV in CAFRA Boundary: \$35,027,000	Occasional	30	Medium
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$140,841,000	Frequent	30	High ^h
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$34,400 2,500-Year MRP: \$681,313 Annualized Loss: \$582	Low	6	Low ^g
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.

9.2.5 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 Bass River indicated that the municipality has minimum planning, regulatory, administrative, technical, community resiliency and community political capability, and a limited fiscal capability; and a commensurate political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

Bass River Township has very limited fiscal capability due to a number of constraints. As stated in the profile above there are only 1443 residents in the township and practically no industry with the exception of Viking Yacht, Caldwell Marine, International, and few small businesses.

Approximately fifty percent of land is owned by federal and state government agencies which do not make any payments to the township in lieu of taxes. Further, the majority of the township land is under control of the NJ Pinelands Commission thus limiting the ability of the town to attract industry, business, farms, or even new residents.

Taxes on residents are already high and will continue to grow. There is nothing to suggest this situation will change in the foreseeable future.

9.2.5.1 Legal and Regulatory Capability

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

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	2009		Bass River title 15	Little Egg Harbor Township	+	+	
2) Zoning Ordinance	X	2013		Bass River title 17	Little Egg Harbor Township	+	+	
3) Subdivision Ordinance	X	1990		Bass River title 16	Bass River	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	2013		Bass River title 15	Bass River	+	+	
4a) Cumulative Substantial Damages	X	2013		Bass River title 15	Bass River	+	+	
4b) Freeboard	X	2013		Bass River title 15	Bass River	+	+	
5) Growth Management	X	2013		Bass River title 15	Bass River	+	+	
6) Floodplain Management / Basin Plan	X	2013		Bass River 15	Bass River	+	+	
7) Storm Water Management Plan/Ordinance	X	2006		Bass River title 13	Bass River	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X	2004		Bass River Planning Board	Bass River	+	+	

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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	2013		BUDGET	Bass River	+	+	
10) Site Plan Review Requirements	X	2006		Bass River title 16	Bass River	+	+	
11) Open Space Plan								None
12) Stream Corridor Management Plan	X	1985		Bass River title 15	Bass River	+	+	
13) Watershed Management or Protection Plan	X	2007		Bass River title 13	Bass River	+	+	
14) Economic Development Plan	X	2004		Bass River title 15	Bass River	+	+	
15) Comprehensive Emergency Management Plan	X	2012		EOP	Bass River Emergency Management	+	+	
16) Emergency Response Plan	X	2012		EOP	Bass River Emergency Management	+	+	
17) Post Disaster Recovery Plan	X	July 2013		EOP	LEPC	+	+	
18) Post Disaster Recovery Ordinance	X	July 2013		EOP	LEPC	+	+	
19) Real Estate Disclosure Requirement								None
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	X	1983		CMP 1983	Pinelands Commission	+	+	

9.2.5.2 Administrative and Technical Capability

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

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 Board and Twp. Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Twp. Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Planning Board and Twp. Engineer
4) NFIP Floodplain Administrator	Y	Twp. Engineer
5) Surveyor(s)	Y	Twp. Engineer
6) Personnel skilled or trained in GIS applications	Y	Twp. 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	Bass River CFO

9.2.5.3 Fiscal Capability

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

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	No
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	UNK
9) Withhold public expenditures in hazard-prone areas	UNK
10) State mitigation grant programs	Currently making application
11) Other	None

9.2.5.4 Community Classifications

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

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 Bass River'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/>

9.2.6 MITIGATION STRATEGY

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

9.2.6.1 Past Mitigation Actions/Status

Bass River Township did not participate in the 2008 Hazard Mitigation Plan. As such, no mitigation actions were developed for the Township.

9.2.6.2 Hazard Vulnerabilities Identified

In the Township of Bass River, estimated 106 live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 12% located within the 1% annual chance flood area. A total of 15.8% 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 Bass River has a total of 62 NFIP policies, 30 of which are located within the 1% annual chance flood area. FEMA has identified 2 Repetitive Loss (RL) property, including 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)
Bass River	62	53	\$1,317,833	0	0	42	57	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 Apr 2012 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 Apr 2012).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates

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.

9.2.7 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
BR-1	Install new infrastructure at the end of Amasas Landing Rd.	Yes	All	2-1 2-2 3-1	Bass River OEM and Board of Commissioners	High	High	FEMA HMA	Short Term DOF	High	SP
BR-2	Install generators in critical facilities, such as the municipal building, OEM building, firehouse, and grammar school, which is our shelter	Yes	All	1-2 3-2	Board of Commissioners and OEM	High	Medium	HMGP PDM	Short Term DOF	High	SP
BR-3	Public Outreach/Education in storm and flood preparedness and notification procedures.	N/A	All	1-1 1-5 5-1 5-2 5-3	OEM Board of Commissioners	N/A	low	FEMA Board of Commissioners	Short Term	Medium	PE
BR-4	Provide planning and engineering information to residents and businesses. Include information on acquisition, elevation, and relocation, structural modifications, flood proofing, or relocation.	N/A	Flood	1-1 1-5 2-1 2-2 3-1 4-2	Township Engineer Board of Commissioners OEM	Medium	N/A	FEMA HMA, CDBG	Long Term DOF	Medium	PR
BR-5	Evaluate and repair flood prone areas on US#9, CR 542 and Maple Ave.	N/A	Flood	1-1 2-1	NJ DOT County DOT	N/A	Medium	NJ DOT County DOT, Municipal DPW	Long Term DOF	Medium	PP
BR-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
BR-7	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard	N/A	All Hazards	5-1 5-2 5-3	Municipality with support from Planning Partners, County	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
	risk reduction to include: • Disaster preparedness • Hazard mitigation				Planning, NJOEM, FEMA						
BR-8	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
BR-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
BR-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
BR-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
BR-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
BR-13	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
BR-14	Provide public education and outreach on proper	N/A	Severe Storm	1-5 5-1	Municipal Clerk, OEM and	Medium	Low	Municipal Budget	Short Term	High	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
	installation and/or use of backup power			5-3	government						
BR-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
BR-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
AH	All Hazards
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
G	Generic
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.

9.2.8 PRIORITIZATION OF MITIGATION INITIATIVES

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

Prioritization of Mitigation Initiatives							
Initiative #	# 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)
BR-1	3	Med.	Med.	Yes	Yes	No	High
BR-2	2	High	High	Yes	Yes	No	High
BR-3	5	Med.	Med.	Yes	Yes	No	Medium
BR-4	6	Med.	Med.	Yes	Yes	Yes	Medium
BR-5	2	Low	Low	Yes	Yes	No	Medium
BR-6	7	Medium	Low	Yes	Yes	Yes	Medium
BR-7	3	Medium	Medium	Yes	Yes	No	High
BR-8	1	Medium	Medium	Yes	Yes	Yes	Medium
BR-9	3	Medium	Medium	Yes	Yes	Yes	Medium
BR-10	1	Medium	Low	Yes	Yes	Yes	High
BR-11	1	High	Low – High	Yes	Yes	No	High
BR-12	2	Medium	Medium	Yes	Yes	Yes	Medium
BR-13	3	Medium	Low	Yes	Yes	Yes	Medium
BR-14	3	Medium	Low	Yes	Yes	Yes	High
BR-15	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
BR-16	6	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.2.8.1 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 Bass River 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 Bass River 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 Bass River has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.2-1: Bass River Flood Exposure Map

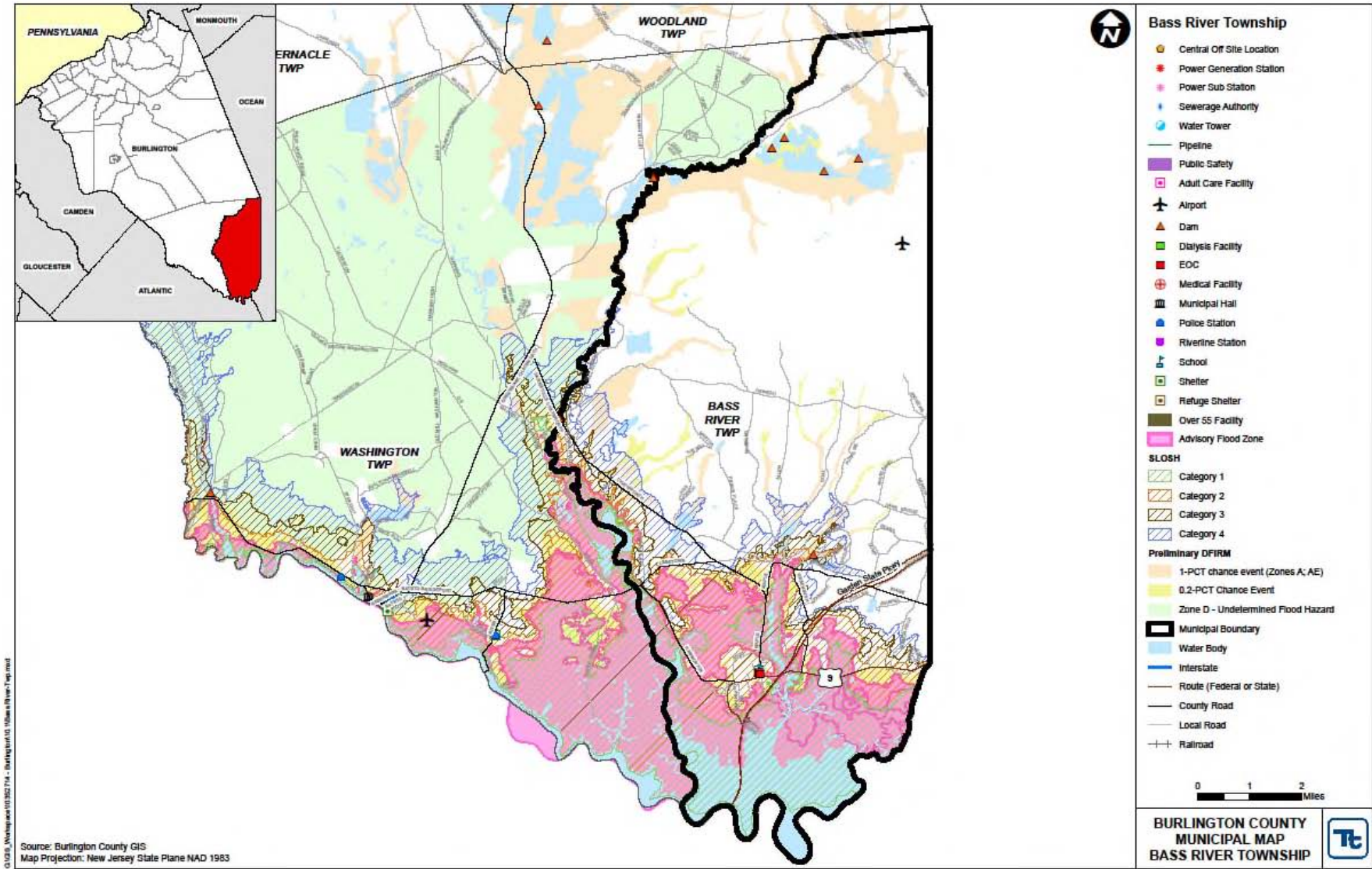
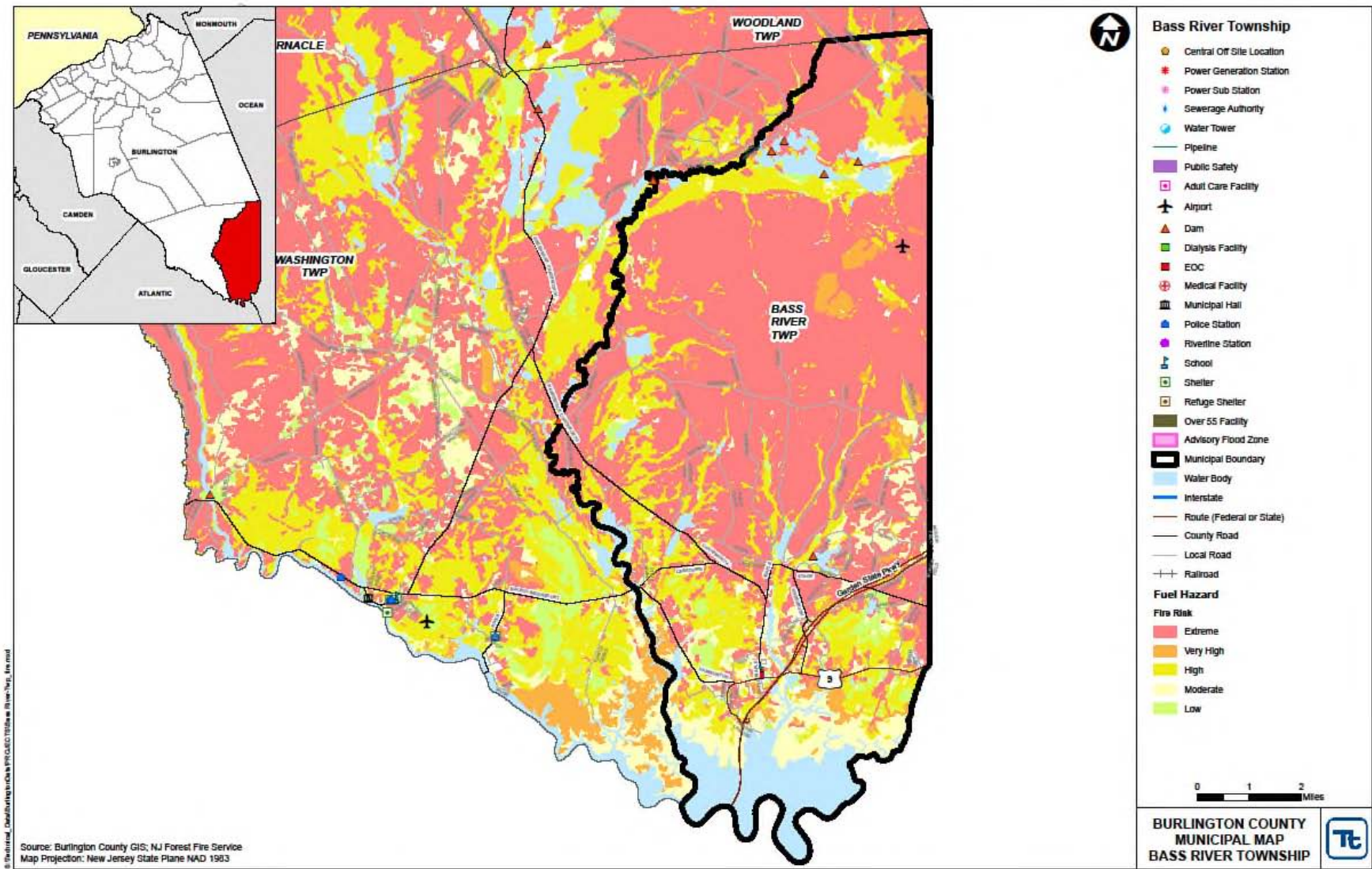


Figure 9.2-1: Bass River Wildfire Fuel Exposure



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

It is the intention of the Township of Bass River is 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

9.2.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.3 City of Beverly

This section presents the jurisdictional annex for the City of Beverly.

9.3.1 Hazard Mitigation Plan Point of Contact

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Rich Wolbert Address: 446 Broad Street Phone Number: (609) 680-3638 Fax Number: (609) 387-3558 E-mail Address: rwolbert@thecityofbeverly.com	Name: Donna Snyder Address: 446 Broad Street Phone Number: (609) 747-7084 Fax Number: (609) 387-3558 E-mail Address: dsnyder@thecityofbeverly.com

9.3.2 Profile

9.3.2.1 Population

The population of the City of Beverly is estimated to be 2,577, based on information gathered during the 2010 U.S. Census.

9.3.2.2 Location

The City of Beverly is located in northern Burlington County along the Delaware River. The City is bordered by Edgewater Park to the south and east and Delanco to the west. It is bordered by Pennsylvania to the north, across the Delaware River.

9.3.2.3 Brief History

Beverly began as a ferry crossing and transportation continued to be a major theme in this small borough's history. The transition to a modern village began with the arrival of railroad and steamboat service in the 1830s and 1840s. In 1834, the Bordentown-Camden leg of the Camden & Amboy Rail Road (C&A) was built through here. Construction of a steamboat wharf in 1847 soon drew passengers and freight from surrounding farms. Developers sensed a real estate market poised for growth with these new transportation connections in place. They bought a 75-acre tract around Dunk's Ferry in 1847 and began advertising a healthful and picturesque setting to prospective tourists and residents. By 1848 a new town called Beverly was laid out, and the following year the C&A built a rail station in the village.

The decades between 1850 and 1900 were peak growth years. Rail and steamboat connections expanded quickly. An 1873 promotional pamphlet noted that there were twelve trains to Philadelphia and eight trains to New York six days a week from Beverly station. Steamboats to Philadelphia called at the Beverly docks five times a day; in 1874, the equivalent of 63,000 round trips to Philadelphia was sold here. Transportation options expanded further with the arrival of a Camden-Trenton trolley line in 1901.

The Borough of Beverly was established within Willingboro Township by the Legislature in 1850. The City of Beverly was incorporated on April 13, 1857. By 1920, most of Beverly City was fully developed and after World War II growth shifted to adjacent rural areas.¹

¹ <http://www.delrivgreenway.org/heritagetrail/Beverly-City.html>

9.3.2.4 Governing Body Format

Beverly is governed under the city form of New Jersey municipal government, and consists of an elected mayor and a five-member elected city council. Responsibilities of this governing body include all executive and legislative functions. The Mayor and members of the City Council serve five year terms of office. Under this form, mayor and council are elected in partisan elections. The mayor serves a four-year term, unless a two or three-year term preceded the passage of the 1997 law.

The mayor is the chief executive, may participate in council meetings and can vote to break ties. The mayor can veto ordinances and serves as the head of the police department. Meanwhile, the council is the legislative body of the municipality and appoints most of the subordinate officers of the city.

9.3.2.5 Growth/Development Trends

The City of Beverly has not had any significant growth in the past decade due to the municipality being almost completely built-out. The City has recently purchased property along the Delaware River, (Zones a & AE) with the intent to develop the parcels as part of the City's Economic Development Plan. All development will be in accordance with current and future mitigation plans.

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

9.3.3 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	None
Winter Storm	DR-1889	Yes	February 5-6, 2010	None

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	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	None
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	The City sustained very little damage during Irene. Some minor roadway flooding and power outages occurred.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	The City sustained minor roadway flooding, vegetative debris on roadways and 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.

9.3.4 Natural Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the vulnerability risk rankings of potential hazards of the City of Beverly.

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: \$4,292,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$479,929 500-Year MRP: \$1,708,818 Annualized Loss: \$25,830	Frequent	30	Medium ⁱ
Severe Winter Storm	1% of GBS: \$2,031,820 5% of GBS: \$10,159,100	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$12,493,000	Frequent	18	Medium ^h
Drought	Not available	Occasional	12	Low ^g
Earthquake	500-Year MRP: \$133,458 2,500-Year MRP: \$3,132,532 Annualized Loss: \$2,869	Low	6	Medium ^h
Landslides	Not available	Occasional	36	High ⁱ

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 suggested Medium Risk, while project team estimates Low Risk.
- h. Client input suggested Low Risk, while project team estimates Medium Risk.
- i. Client input suggested Low Risk, while project team estimates High Risk.
- j. Client input suggested Low Risk, while project team estimates High Risk.

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

9.3.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the City of Beverly.

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	11/18/09			Construction	+	N/A	
2) Zoning Ordinance	X	11/27/01		Chapter 20	Council	+	N/A	
3) Subdivision Ordinance	X	11/27/01		Chapter 20	Planning / Zoning Board of Adjustment	+	N/A	
4) NFIP Flood Damage Prevention Ordinance			X		Law and Ordinance Committee			
4a) Cumulative Substantial Damages			X		Law and Ordinance Committee			
4b) Freeboard			X		Law and Ordinance Committee			
5) Growth Management			X		Economic Development Committee / Engineering			
6) Floodplain Management / Basin Plan			X		Engineer			
7) Stormwater Management Plan/Ordinance	X	04/01/05			Law and Ordinance Committee	+	N/A	
8) Comprehensive Plan / Master Plan/ General Plan			X		Special Master Plan Sub Committee			
9) Capital Improvements Plan			X		Council			
10) Site Plan Review Requirements			X		Joint Land Use Board			

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					
11) Open Space Plan	N/A							
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	X	11/14/12		Chapter 28	Council / Engineering	+	N/A	
14) Economic Development Plan			X		Economic Development Committee			
15) Comprehensive Emergency Management Plan			X		Law and Ordinance Committee			
16) Emergency Response Plan			X		Law and Ordinance Committee			
17) Post Disaster Recovery Plan			X		Law and Ordinance Committee			
18) Post Disaster Recovery Ordinance			X		Law and Ordinance Committee			
19) Real Estate Disclosure Requirement			X		Law and Ordinance Committee			
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A							

9.3.5.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the City of Beverly.

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	City Engineer/Planner
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	N	
3) Planners or engineers with an understanding of natural hazards	Y	City Engineer/Planner
4) NFIP Floodplain Administrator	Y	City Engineer's Office
5) Surveyor(s)	Y	City Engineer's Office
6) Personnel skilled or trained in GIS applications	Y	City Engineer's Office
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	City OEM
9) Grant Writer(s)	Y	City Engineer's Office
10) Staff with expertise or training in benefit/cost analysis	Y	City Engineer's Office / City Administrator

9.3.5.3 Fiscal Capability

The table below summarizes financial resources available to the City of Beverly.

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	No
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	Unknown
10) State mitigation grant programs	Yes
11) Other	

9.3.5.4 Community Classifications

The table below summarizes classifications for community program available to the City of Beverly.

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	N/A	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the City of Beverly' 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/>

9.3.6 MITIGATION STRATEGY

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

9.3.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.3.7. 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				Working with Bombardier Transportation (Riverline) to correct drainage issues at Manor Road and Railroad Avenue grade crossing.
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood-proof these properties		X				Acquired waterfront parcels, exploring mitigation efforts in this Mitigation Plan relative to possible undersized storm sewer system.
Investigate ways to improve and mitigate repetitive flooding of Sewer Treatment Plant		X				The Beverly Sewerage Authority is exploring the possibility of raising the tank walls and the possibility of berms.
Restructure and rebuild sea wall along river front which is causing increased flooding in the general area	X					Will be continued in this Mitigation Plan. Permitting is too prohibitive both from a realistic perspective and a financial perspective. We will work with Legislative Representatives to get waivers on certain permitting requirements.

9.3.6.2 Hazard Vulnerabilities Identified

In the City of Beverly, an estimated 125 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 36% is located within the 1% annual chance flood area. A total of \$14,690,000 (4.2%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The City of Beverly has a total of 9 NFIP policies, 0 of which are located within the 1% annual chance flood area. FEMA has identified no Repetitive Loss (RL) property, and no 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)
Beverly (C)	9	1	\$3,514	0	0	0	2	7

Source: 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.

Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2 (current as of 2013).

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⁾
No loss calculated	-	-	-	-	-	-	-	-	-	-

Source: HAZUS-MH 2.1

Notes:

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

(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).

NA = Not available

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.

9.3.7 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
BV-1	Critical Operations Generator – City Hall/Police	Existing	All Hazards	1-1 1-2 3-2	Twp. OEM, Twp. Police	Medium	Medium	HMGP	Short	High	ES
BV-2	Waterfront Stabilization – Bank erosion along the Delaware River, undermining infrastructure. Continuation of Revetment Block	New/Existing	Erosion	2-1 3-1 4-1	Twp. DPW, Twp. Engineer, Twp. Planning Dept.	High	High	HMGP/US Fish and Wildlife	Long	Medium	SP/NR
BV-3	Address issues with Van Kirk Seawall/spillway	Existing	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer	High	Medium	HMGP/CDBG	Short	High	SP/NR
BV-4	Address issues with Van Sciver Seawall	Existing	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer	High	Medium	HMGP	Short	High	SP/NR
BV-5	Address issues with Magnolia Street MS4	Existing	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer	High	High	HMGP/CDBG/NJDOT	Long	Medium	SP
BV-6	Improve Locust and Putnum Drainage	Existing	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer, Twp. Planning Dept.	Low	Low	CDBG/NJDOT	Short	Medium	SP
BV-7	Address issues with Putnum Street MS4 Interconnect	New	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer	Medium	Medium	CDBG/NJDOT	Long	Medium	SP
BV-8	Conduct Cistern Study in appropriate areas.	New	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer	Medium	Medium	TBD	Long	Low	SP
BV-9	Address issues with Manor & Railroad flooding	New/Existing	Flooding	2-1 3-1 4-1	Twp. DPW, Twp. Engineer	Medium	Medium	Local/Partnership	Short	High	NR/SP/ES
BV-10	Evaluate benefits of participating in CRS	Existing	All	1-1 1-5	Twp. Committee;	Medium	Low	Twp./Public	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
	program			2-1 2-2 3-1 4-1 5-1	Planning						
BV-11	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
BV-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 and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR
BV-13	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
BV-14	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
BV-15	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
BV-16	Promote the participation of Floodplain	N/A	Flood	1-4 4-2	Municipality with support	Medium	Medium	Municipal Budget	Short	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
	Administrator within the planning process and other related activities				from County, NJOEM and FEMA						
BV-17	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
BV-18	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	H	PR
BV-19	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

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.

9.3.8 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)
BV-1	3	Medium	Medium	Y	Y	N	High
BV-2	3	High	High	Y	Y	N	Medium
BV-3	3	High	Medium	Y	Y	N	High
BV-4	3	High	Medium	Y	Y	N	High
BV-5	3	High	High	Y	Y	N	Medium
BV-6	3	Low	Low	Y	Y	N	Medium
BV-7	3	Medium	Medium	Y	Y	N	Medium
BV-8	3	Medium	Medium	Y	N	N	Low
BV-9	3	Medium	Medium	Y	N	Y	High
BV-10	7	Medium	Low	Yes	Yes	Yes	Medium
BV-11	3	Medium	Medium	Yes	Yes	No	High
BV-12	1	Medium	Medium	Yes	Yes	Yes	Medium
BV-13	3	Medium	Medium	Yes	Yes	Yes	Medium
BV-14	1	Medium	Low	Yes	Yes	Yes	High
BV-15	1	High	Low – High (for 5 year update)	Yes	Yes	No	High
BV-16	2	Medium	Medium	Yes	Yes	Yes	Medium
BV-17	3	Medium	Low	Yes	Yes	Yes	Medium
BV-18	3	Medium	Low	Yes	Yes	Yes	High
BV-19	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.3.8.1 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.

9.3.9 Future Needs to Better Understand Risk/Vulnerability

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

9.3.10 hazard area Extent and location

A hazard area extent and location map illustrating the probable areas impacted within the City of Beverly 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 City of Beverly has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.3-1: Beverly City Flood Exposure Map

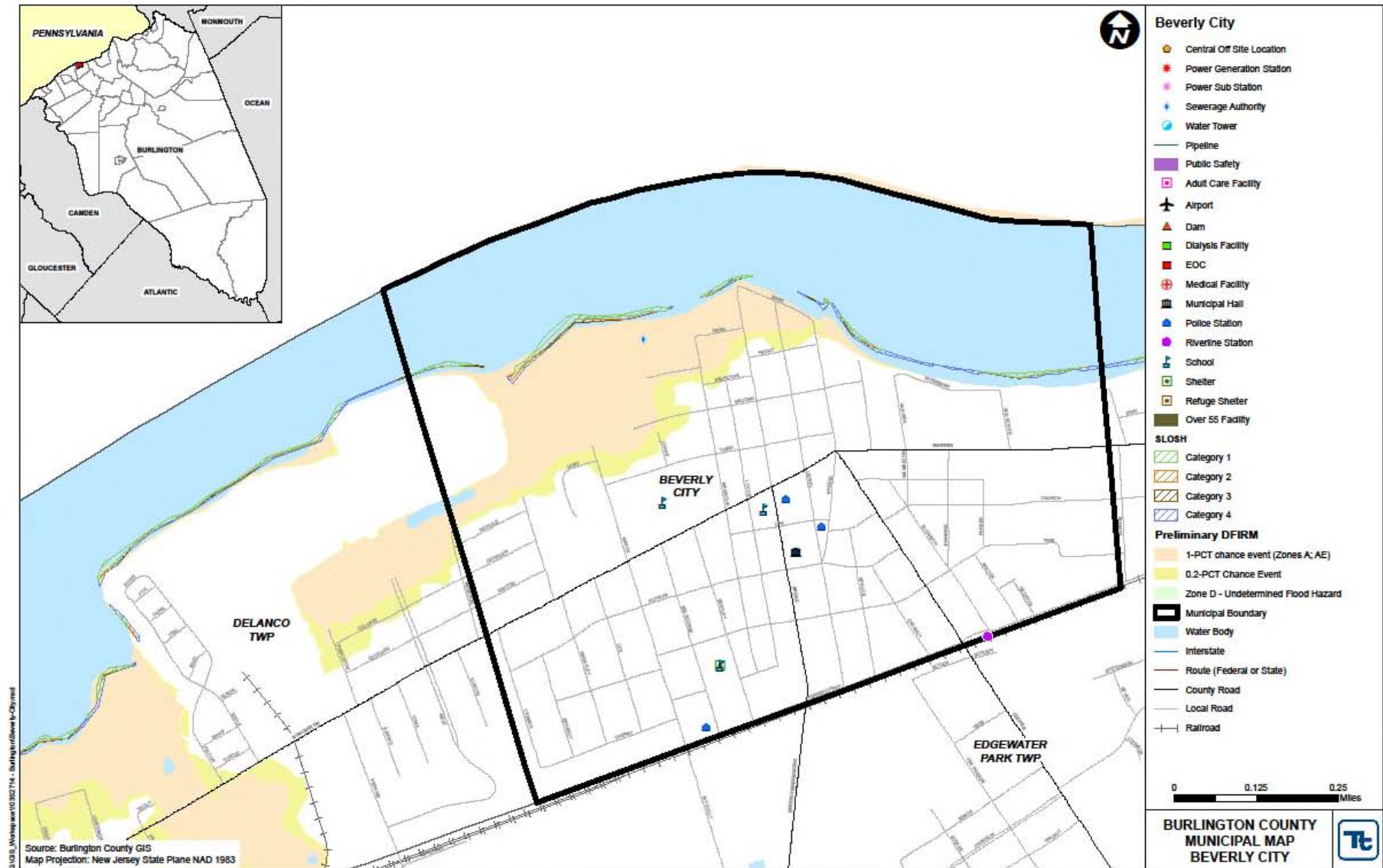
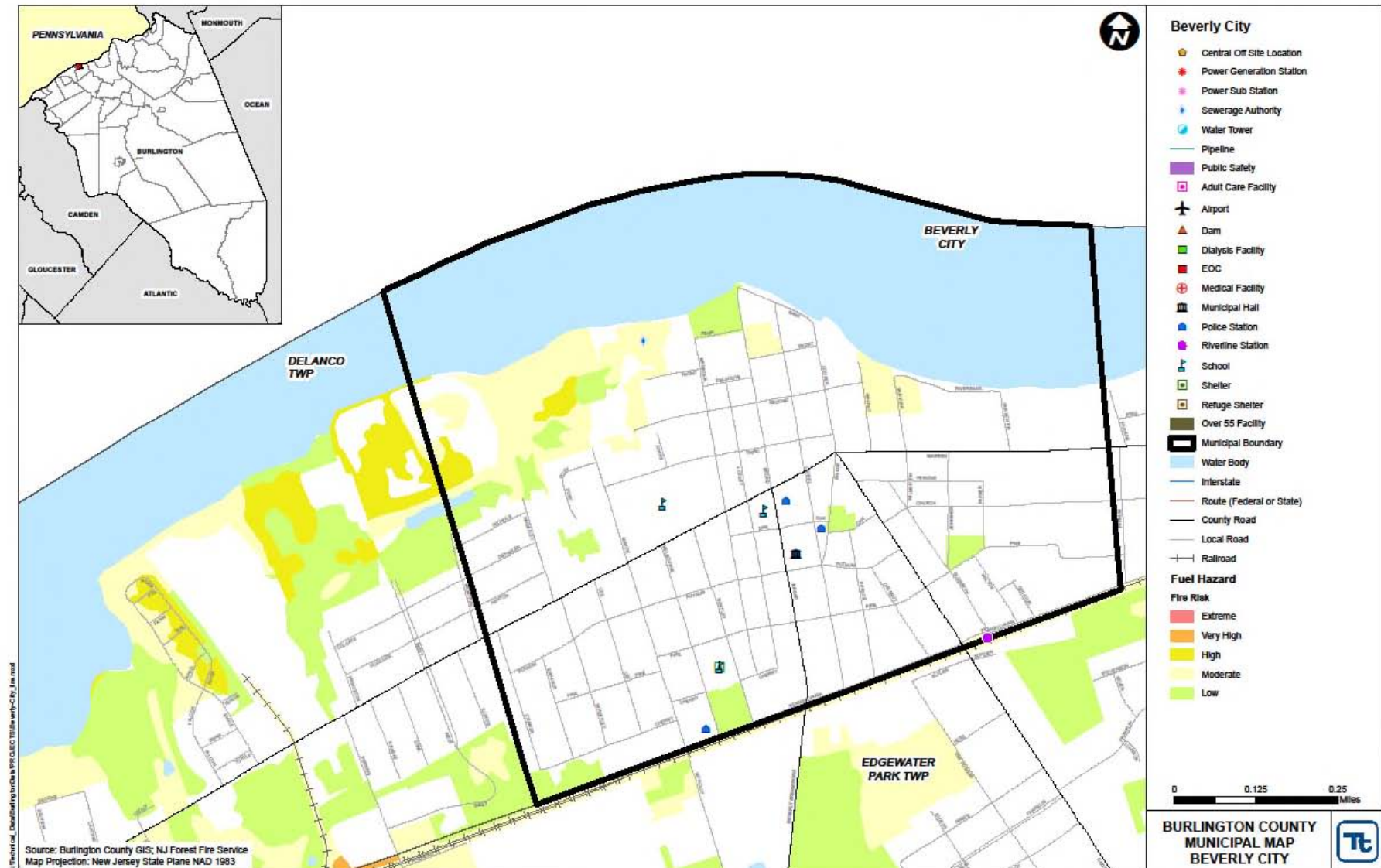


Figure 9.3-2: Beverly City Wildfire Fuel Exposure



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

It is the intention of City of Beverly 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	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

9.3.12 Additional Comments

There are no additional comments at this time.

9.4 City of Bordentown

This section presents the jurisdictional annex for The City of Bordentown.

9.4.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: James E. Lynch, Jr. Title: Deputy Mayor, Emergency Management Coordinator Address: 324 Farnsworth Avenue, Bordentown City Phone Number: (609) 298-6812 Cell Phone: (609) 847-6051 Fax Number: 609-298-8467 E-mail Address: mayorlynch@gmail.com	Name: Brian A. Maugeri, Sr. Title: Deputy OEM Coordinator Address: 324 Farnsworth Avenue, Bordentown City Phone Number: (609) 298-0450 Fax Number: 609-298-0673 E-mail Address: bcoem60@comcast.net

9.4.2 PROFILE

9.4.2.1 Population

The population of City of Bordentown is estimated to be 3,924, based on information gathered during the 2010 U.S. Census.

9.4.2.2 Location

The City of Bordentown is located on the northern portion of Burlington County and encompasses one square mile. It is bordered to the northwest by the Delaware River and surrounded by the Township of Bordentown.

9.4.2.3 Brief History

The City of Bordentown was settled in 1682 when Thomas Farnsworth, an English Quaker, moved up river from Burlington to make a new home for his family on a windswept bluff overlooking a broad bend in the Delaware River. Farnsworth Landing then became the center of trade for the region. Joseph Borden, for whom the town is named, arrived here in 1717. The town was occupied by the Hessians in 1776 and pillaged and burned by the British in May and June of 1778.¹

Bordentown's location on the Delaware, just below the State Capital of Trenton, made it an important river port. Shipbuilding and river trade were important industries. The opening of the Delaware Raritan Canal also played a role in the town's growth, throughout these changes and boom times Bordentown remained small. As the Town grew from the riverbank east the architecture has evolved as well. Starting with Federal by the river to Victorians on the eastern side, spattered with arts & craft bungalows, Sears Four squares and stately original mansions many of them altered as tastes changed. Mansard roof lines

¹ <http://www.downtownbordentown.com/history.php>

added, Federal buildings dressed up with some Victorian features. Industrialists, inventors, artists, educators and even spies have made Bordentown their home.²

9.4.2.4 Governing Body Format

Bordentown has been governed under the Commission form of government (Walsh Act) since 1913, with a government consisting of three commissioners, one of whom is selected to serve as Mayor. Members are elected to four-year concurrent terms in office in non-partisan elections.³ Under this form, the Commissioners function as the legislative authority of the municipality.⁴

9.4.2.5 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 City. Refer to the map in section 9.4.10 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
Mission First	Residential	1	1 Spring Street	1301/1		Received Board approval 2013

9.4.3 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,	None

² http://bordentownhistory.org/Bordentown_History/index.html

³ http://www.njslom.org/history_municipal_govt.pdf

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
			2007	
Winter Storm	DR-1873	Yes	December 19-2009	Roadways closed, power outages
Winter Storm	DR-1889	Yes	February 5-6, 2010	Roadways closed, power outages, snow removal issues
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Flooding of roadways and basements
Winter Storm	DR-1954	Yes	December 26-27, 2010	Roadways closed, power outages, plowing issues
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Power outages, debris, flooding
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Power outages, debris, high winds

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.

9.4.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards for the City of Bordentown.

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: \$12,832,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$627,501 500-Year MRP: \$3,398,007 Annualized Loss: \$47,510	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$3,643,270 5% of GBS: \$18,216,350	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$69,621,000	Frequent	21	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$257,933 2,500-Year MRP: \$6,168,477 Annualized Loss: \$5,670	Rare	6	Low
Landslides	Not available	Rare	18	Medium

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.

9.4.5 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 City of Bordentown 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.

9.4.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the City of Bordentown.

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	1998		Ch. 15.16 Pa.010 pg.27 Ch. 15.04 pa 010 pg 3	Building Inspector	+	+	
2) Zoning Ordinance	X	1990		Ch. 16.68 Pa 010 pg.152	Community Development	+		
3) Subdivision Ordinance	X	1990		Ch. 16 sec 72 Ch. 010 pg. 165	Planning Board	+		
4) NFIP Flood Damage Prevention Ordinance			X		O E M / Code Enforcement			
4a) Cumulative Substantial Damages								
4b) Freeboard								
5) Growth Management	X	2008		Master land use plan	Community Development	+		
6) Floodplain Management / Basin Plan	X	1990		Ch. 16 sec.36 pa 010 pg.109	O E M	+		codified Ch 25.605 pg LD06:22
7) Stormwater Management Plan/Ordinance	X	1990		Ch. 25-502 pg LD 05:3	D P W	+		Updated 2007-27
8) Comprehensive Plan / Master Plan/ General Plan	X	2008		252-20A	Community Development	+		
9) Capital Improvements Plan		2008	X	2013 - 08	Administrator			Existing Plans require collating
10) Site Plan Review Requirements	X	1990		Ch.25 sec 801 pg LD 3	Municipal Engineer	+		Updated 2008-11
11) Open Space Plan	X	1996		Ch. 25 Sec 518 pg. LD 05:47	Community Development	+		
12) Stream Corridor Management	X	1990		Ch. 16 sec 72	Community	+		Update 2007-27

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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				Para 13 pg. 173	Development			
13) Watershed Management or Protection Plan	X	2007		Ch. 25:903 para 4 pg. 12	Community Development	+		Update 2007-28
14) Economic Development Plan	X	2010		2010-4	Community Development	+		Updated 2013-11
15) Comprehensive Emergency Management Plan	X	2010			OEM	+		Approved by NJSP
16) Emergency Response Plan	X	2010			OEM	+		Approved by NJSP
17) Post Disaster Recovery Plan	X	2010			OEM	+		Approved by NJSP Jan 2011
18) Post Disaster Recovery Ordinance			X		OEM			Pending adoption
19) Real Estate Disclosure Requirement	X				NJ DCA/HUD	+		
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								As needed

9.4.5.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the City of Bordentown.

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	Office of Community Development, Consulting Engineer (BCM)
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Office of Building Inspection, Consulting Engineer (BCM)
3) Planners or engineers with an understanding of natural hazards	Y	Office of Community Development, Consulting Engineer (BCM) and OEM
4) NFIP Floodplain Administrator	Y	Office of Emergency Management
5) Surveyor(s)	Y	Consulting Engineer
6) Personnel skilled or trained in GIS applications	Y	Department of Public Works, Consulting Engineer (BCM)
7) Scientist familiar with natural hazards	Y	Consulting Services as needed, Consulting Engineer (BCM)
8) Emergency Manager	Y	Office of Emergency Management
9) Grant Writer(s)	Y	O E M – Office of Community Development
10) Staff with expertise or training in benefit/cost analysis	Y	Consulting Engineer

9.4.5.3 Fiscal Capability

The table below summarizes financial resources available to the City of Bordentown.

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-water
5) Impact fees for homebuyers or developers of new development/homes	Don't Know
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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
10) State mitigation grant programs	Yes
11) Other	Don't Know

9.4.5.4 Community Classifications

The table below summarizes classifications for community program available to the City of Bordentown.

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	Not Listed	
Building Code Effectiveness Grading Schedule (BCEGS)	4	2009
Public Protection	5	1997
Storm Ready	Not Listed	
Firewise	Not Listed	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the City of Bordentown'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/>

9.4.6 MITIGATION STRATEGY

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

9.4.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in shown below. 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	
Secure a site for building or renovation of an existing building. Target date and estimated cost can be determined when a site or building has been established.					X	This past mitigation action is to be discontinued due to building renovation plans being unknown by City officials and OEM.

9.4.6.2 Hazard Vulnerabilities Identified

In the City of Bordentown, an estimated 137 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 17% is located within the 1% annual chance flood area. A total of \$22,536,000 (3.7%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The City of Bordentown has a total of 11 NFIP policies, 5 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)
Bordentown (C)	11	6	\$31,802	1	0	5	6	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⁾
Bordentown City Drinking Water Treatment Plan	Bordentown City (located within Hamilton Township, Mercer County)	Potable WTP	-	X	-	-	-
Well 1	Bordentown City (located within Hamilton Township, Mercer County)	Potable Well	-	X			
Well 2	Bordentown City (located within Hamilton Township, Mercer County)	Potable Well	-	X			
Well 3	Bordentown City (located within Hamilton Township, Mercer County)	Potable Well	-	X			
Well 5	Bordentown City (located within Hamilton Township, Mercer County)	Potable Well	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

* Potential losses were not estimated for facilities located outside of the Planning Area.

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.

9.4.7 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
BoC-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
BoC-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
BoC-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
BoC-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
BoC-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 communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
BoC-6	Continue to support the implementation, monitoring, maintenance, and updating of this Plan	New and Existing	All Hazards	1-4	Municipal Government, OEM with support from Planning Partners, County Planning,	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning	On-going	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
	through participating in the 5 year Plan Update				NJOEM, FEMA			grants			
BoC-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
BoC-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
BoC-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
BoC-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	NR
BoC-11	Retrofit the Water Treatment Plant and wells located in Hamilton Township, Mercer County to address flooding issues	Existing	Flood	1-4 4-2	Municipality, Planning and Engineer	High	High	HMA Grants, Municipal Budget	Short Term DOF	High	SP

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.

9.4.8 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)
BoC-1	7	Medium	Low	Yes	Yes	Yes	Medium
BoC-2	3	Medium	Medium	Yes	Yes	No	High
BoC-3	1	Medium	Medium	Yes	Yes	Yes	Medium
BoC-4	3	Medium	Medium	Yes	Yes	Yes	Medium
BoC-5	1	Medium	Low	Yes	Yes	Yes	High
BoC-6	1	High	Low – High	Yes	Yes	No	High
BoC-7	2	Medium	Medium	Yes	Yes	Yes	Medium
BoC-8	3	Medium	Low	Yes	Yes	Yes	Medium
BoC-9	3	Medium	Low	Yes	Yes	Yes	High
BoC-10	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
BoC-11	2	High	High	Yes	Yes	No	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.4.8.1 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.

9.4.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

City of Bordentown has no additional risk vulnerabilities that need to be addressed at this time.

9.4.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the City of Bordentown 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 City of Bordentown has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.4-1: Bordentown City Flood Exposure Map

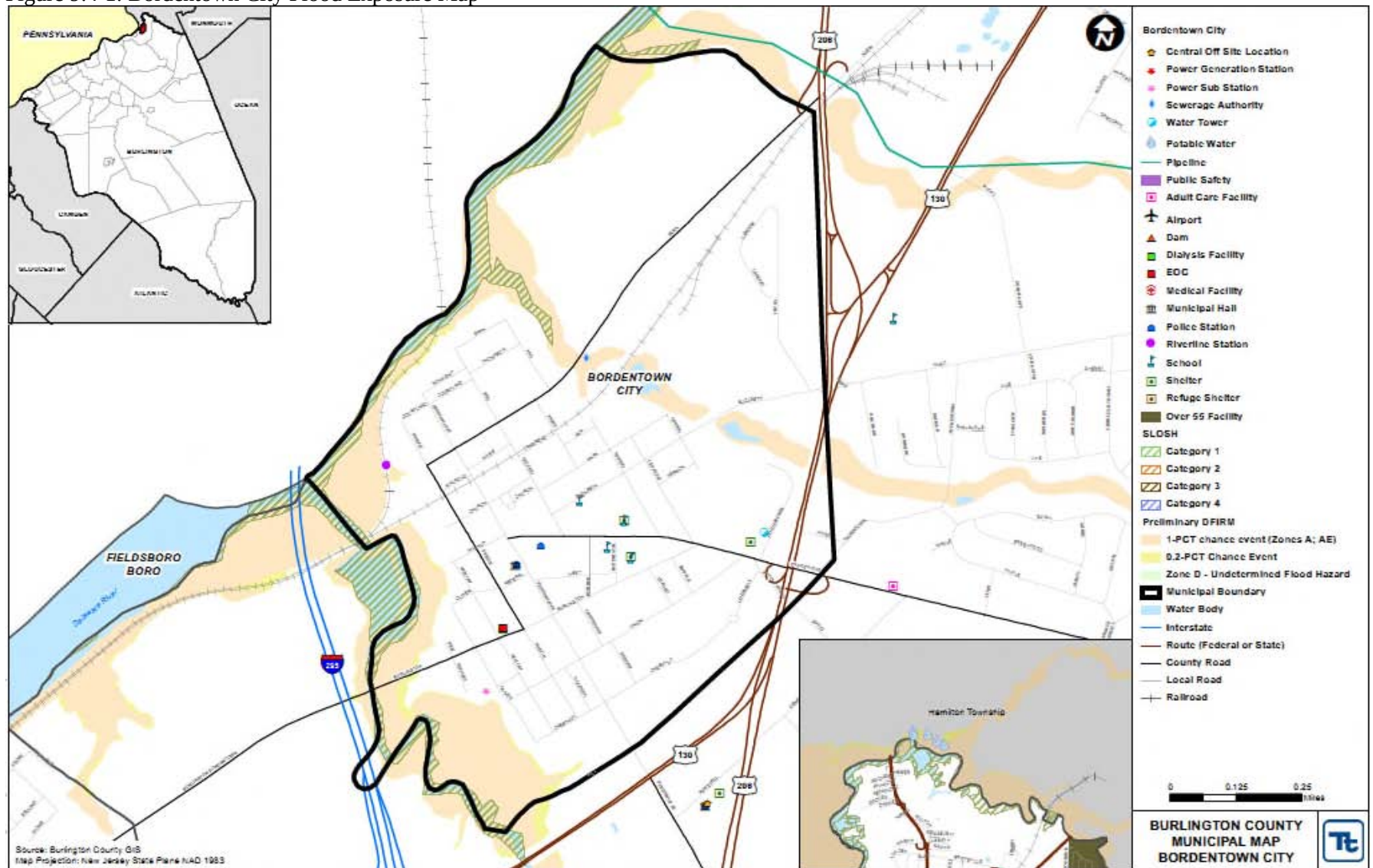
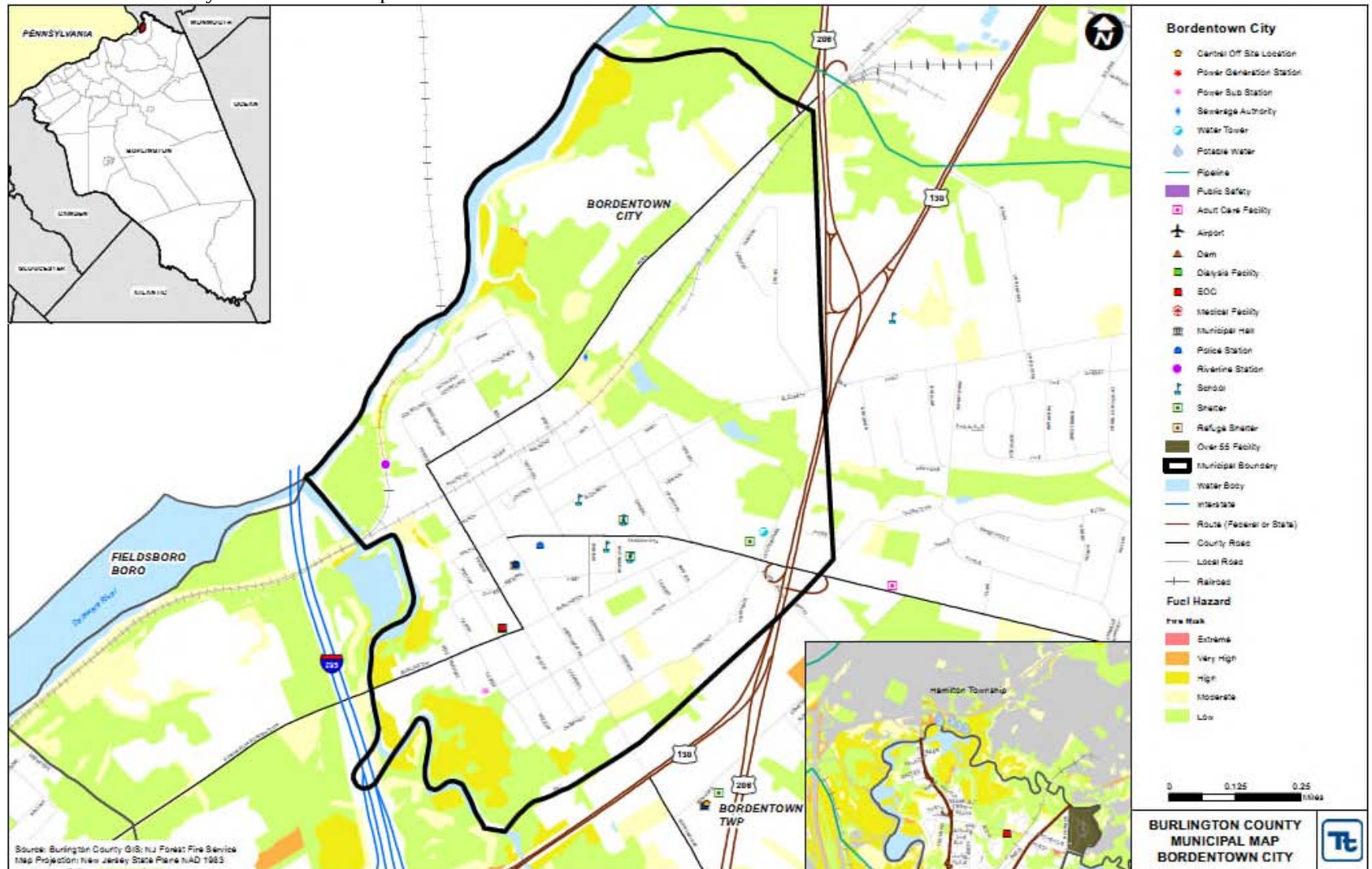


Figure 9.4-2: Bordentown City Wildfire Fuel Exposure



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

It is the intention of City of Bordentown 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

9.4.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.5 Township of Bordentown

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

9.5.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Andrew Law Title/Office: Office of Emergency Management Address: 1 Municipal Drive, Bordentown, NJ 08505 Phone Number: (609)-668-2288 Fax Number: (609)298-5125 E-mail Address: a.law@bordentowntownship.com	Name: Dean Buhrer Title/Office: Director - DPW Address: 1 Municipal Drive, Bordentown, NJ 08505 Phone Number: (609) 209-0732 Fax Number: 609)298-5125 E-mail Address: d.buhrer@bordentowntownship.com

9.5.2 PROFILE

9.5.2.1 Population

The population of the Township of Bordentown is estimated to be 11,367, based on information gathered during the 2010 U.S. Census.

9.5.2.2 Location

The Township of Bordentown is located in the northernmost portion of Burlington County. The Township borders the Delaware River to the north and northwest and Surrounds most of the City of Bordentown in the southwest portion of the Township along the Delaware River. In addition, it is bordered to the east and southeast by Chesterfield, the south by Mansfield, and the southwest by Fieldsboro.

9.5.2.3 Brief History

An act creating the Township of Bordentown was passed and approved by the New Jersey State Legislature on January 31, 1852.

The governing body consisted of three Committeemen. The first meeting of the Township Committee was held in a shed. When cold weather prevented the use of this location, meetings were held in a private home until 1903 when the first Township Hall was erected on Cemetery Lane.

9.5.2.4 Governing Body Format

The Township of Bordentown is governed by a Township Committee consisting of five members. The elections are partisan and members serve in three year, staggered terms. This Township Committee, in turn, elects a mayor to serve for a one-year term.

The Township Committee serves as the Legislative branch of government and establishes policies for the administration of various departments. The Committee appoints the Township Administrator who is responsible for carrying out those policies and overseeing day-to-day operations.

9.5.2.5 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 9.5.10) 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
Bordentown Waterfront Redevelopment	Residential and Commercial	671 Residential, 1 Commercial	Rt. 130 and Burlington Rd.	140/5-8, 10-19	A & C Zones	Site under development
Team Campus	Commercial	7	110 Rt. 130	57/6	C Zone	Under construction
Holiday Inn Express	Commercial	1	195 Rt. 130	64/1,2,39 64/3	C Zone	Planning stage

9.5.3 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	Closed roads and utility outages. \$29,292.97
Winter Storm	DR-1889	Yes	February 5-6, 2010	Closed roads and utility outages. \$22,488.88
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Closed roads and utility outages. \$32,004.78
Tropical Storm/Hurricane	DR-4021/ EM-3332	Yes	August 26-September 5,	Flooding, sustained winds, downed trees, and utility outages. Some infrastructure damage.

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Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Irene			2011	\$3,985,911.28
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	Flooding, sustained winds, downed trees, and utility outages. Some infrastructure damage. \$149,707.77

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.

9.5.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$32,256,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,548,645 500-Year MRP: \$7,654,391 Annualized Loss: \$120,728	Frequent	30	Medium ⁱ
Severe Winter Storm	1% of GBS: \$7,567,480 5% of GBS: \$37,837,400	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$433,522,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low ^g
Earthquake	500-Year MRP: \$470,498 2,500-Year MRP: \$11,448,498 Annualized Loss: \$10,342	Rare	6	Medium ^h
Landslides	Not available	Rare	15	Medium

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 Low Risk, while project team estimates Medium Risk.
- Client input suggested High Risk, while project team estimates Medium Risk.

9.5.5 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 Bordentown 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.

9.5.5.1 Legal and Regulatory Capability

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

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	1998		Ch. 15.16 Pa.010 pg.27 Ch. 15.04 pa 010 pg 3	Building Inspector	+	+	
2) Zoning Ordinance	X	1990		Ch. 16.68 Pa 010 pg.152	Community Development			
3) Subdivision Ordinance	X	1990		Ch. 16 sec 72 Ch. 010 pg. 165	Planning Board			
4) NFIP Flood Damage Prevention Ordinance		X	X		O E M			
4a) Cumulative Substantial Damages								
4b) Freeboard								
5) Growth Management	X	2008		Master land use plan	Community Development			
6) Floodplain Management / Basin Plan	X	1990		Ch. 16 sec.36 pa 010 pg.109	O E M			codified Ch 25.605 page LD06:22
7) Storm-water Management Plan/Ordinance	X	1990		Ch. 25-502 pg LD 05:3	D P W			Updated 2007-27
8) Comprehensive Plan / Master Plan/ General Plan	X	2008		252-20A	Community Development			
9) Capital Improvements Plan		2008	X	2013 - 08	Administrator			Existing Plans require collating
10) Site Plan Review Requirements	X	1990		Ch.25 sec 801 pg LD 3	Municipal Engineer			Updated 2008-11

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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					
11) Open Space Plan	X	1996		Ch. 25 Sec 518 pg. LD 05:47	Community Development			
12) Stream Corridor Management Plan	X	1990		Ch. 16 sec 72 Para 13 pg. 173	Community Development			Update 2007-27
13) Watershed Management or Protection Plan	X	2007		Ch. 25:903 para 4 pg. 12	Community Development			Update 2007-28
14) Economic Development Plan	X	2010		2010-4	Community Development			Updated 2013-11
15) Comprehensive Emergency Management Plan	X	2010			OEM			Approved by NJSP
16) Emergency Response Plan	X	2010			OEM			Approved by NJSP
17) Post Disaster Recovery Plan	X	2010			OEM			Approved by NJSP Jan 2011
18) Post Disaster Recovery Ordinance			X		OEM			Pending adoption
19) Real Estate Disclosure Requirement	X				NJ DCA/HUD			
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								As needed

9.5.5.2 Administrative and Technical Capability

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

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	X	Office of Community Development
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	X	Office of Building Inspection
3) Planners or engineers with an understanding of natural hazards	X	Office of Community Development and OEM
4) NFIP Floodplain Administrator	X	Office of Emergency Management
5) Surveyor(s)	x	Consulting Engineer
6) Personnel skilled or trained in GIS applications	x	Department of Public Works
7) Scientist familiar with natural hazards	X	Consulting Services as needed
8) Emergency Manager	X	Office of Emergency Management
9) Grant Writer(s)	X	O E M – Office of Community Development
10) Staff with expertise or training in benefit/cost analysis	X	Consulting Engineer

9.5.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Not eligible
2) Capital Improvements Project Funding	Yes B A N's
3) Authority to levy taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Public Utilities
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	Yes
10) State mitigation grant programs	Yes
11) Other	

9.5.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	10	
Building Code Effectiveness Grading Schedule (BCEGS)	4	2009
Public Protection	5	1997
Storm Ready	Not Listed	
Firewise	Not Listed	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Bordentown'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/>

9.5.6 MITIGATION STRATEGY

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

9.5.6.1 Past Mitigation Actions/Status

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

9.5.6.2 Hazard Vulnerabilities Identified

In the Township of Bordentown, an estimated 751 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 23% is located within the 1% annual chance flood area. A total of \$47,635,000 (3.9%) 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 Bordentown has a total of 54 NFIP policies, 6 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)
Bordentown (T)	54	3	\$112,099	0	0	6	7	47

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.

9.5.7 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
BTT-1	Jumble Gut Glen: stabilize the stream and banks with wire basket gabion and restore the grade to stop further bank collapse.	Existing	Flood	2-1	FEMA Bordentown Twsp	High	High	FEMA/ Bordentown Twsp.	Short	High	NR
BTT-2	Stabilize streams and banks to restore the grade to stop bank collapse – example: Jumble Gut Glen	Existing	Flood	2-1	FEMA BordentownTwsp.	High	High	FEMA Bordentown Twsp.	Long	High	NR
BTT-3	Jumble Gut Run South Amboy: Remove & Replace storm sewer lines and culvert where necessary – example: Jumble Gut Glen	Existing	Flood	2-1	FEMA Bordentown Twsp	High	High	FEMA Bordentown Twsp.	Long	High	PR
BTT-4	Supply power to essential municipal facilities by providing emergency generators.	New & Existing	All	1-2 3-2	FEMA Bordentown Twsp.	High	Medium	FEMA Bordentown Twsp.	Long	Medium	ES
BTT-5	Municipal Engineer collateral duty as Flood Plain Administrator	New	Flood	1-4	Flood Plain Administrator	Medium	Low	Bordentown Twsp	Short	High	PR
BTT-6	Promote on site groundwater recharge	New	Drought	1-1 4-1	Bordentown Township	High	High	Commercial and Bonds	Long	High	NR
BTT-7	Elevate and document vulnerable structures in floodplain	New	Flood	1-1 1-5 2-1 2-2 3-1	Bordentown Township	High	High	Commercial and Bonds	Long	High	PP
BTT-8	Work with stakeholders and providers to harden utilities against power outages and other utility issues	New	All	1-1 1-4	Bordentown Township	High	High	BAN's	Long	Medium	PR
BTT-9	Evaluate benefits of	Existing	All	1-1	Twp. Committee;	Medium	Low	Twp./Public	OG	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
	participating in CRS program			1-5 2-1 2-2 3-1 4-1 5-1	Planning						
BTT-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 Term	High	PE
BTT-11	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
BTT-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	Medium	Medium	Municipal Budget	Short	Medium	ES
BTT-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 Term	High	PR, ES
BTT-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
BTT-15	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
BTT-16	Enhance resilience to severe storms by joining the NOAA "Storm Ready"	N/A	Severe Storm	1-1 1-5 3-1	Municipality with support from County, NJOEM	Medium	Low	Municipal Budget	Short Term DOF	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
	program.				and FEMA						
BTT-17	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	H	PR
BTT-18	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	Ongoing	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
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 (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.

9.5.8 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)
BTT-1	1	High	High	Yes	Yes	No	High
BTT-2	1	High	High	Yes	Yes	No	High
BTT-3	1	High	High	Yes	Yes	No	High
BTT-4	2	High	Medium	Yes	Yes	No	Medium
BTT-5	1	Medium	Low	Yes	No	Yes	High
BTT-6	2	High	High	Yes	Yes	No	Medium
BTT-7	5	High	High	Yes	Yes	No	Medium
BTT-8	2	High	High	Yes	Yes	No	Medium
BTT-9	7	Medium	Medium	Yes	Yes	No	High
BTT-10	3	Medium	Medium	Yes	Yes	Yes	Medium
BTT-11	1	Medium	Medium	Yes	Yes	Yes	Medium
BTT-12	3	Medium	Low	Yes	Yes	Yes	High
BTT-13	1	High	Low – High	Yes	Yes	No	High
BTT-14	1	Medium	Medium	Yes	Yes	Yes	Medium
BTT-15	2	Medium	Low	Yes	Yes	Yes	Medium
BTT-16	3	Medium	Low	Yes	Yes	Yes	High
BTT-17	3	Medium	Low/Medium	Yes	Yes	Yes	Medium
BTT-18	2	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.5.8.1 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.

9.5.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.5.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Bordentown 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 Bordentown has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.5-1: Bordentown Township Flood Exposure Map

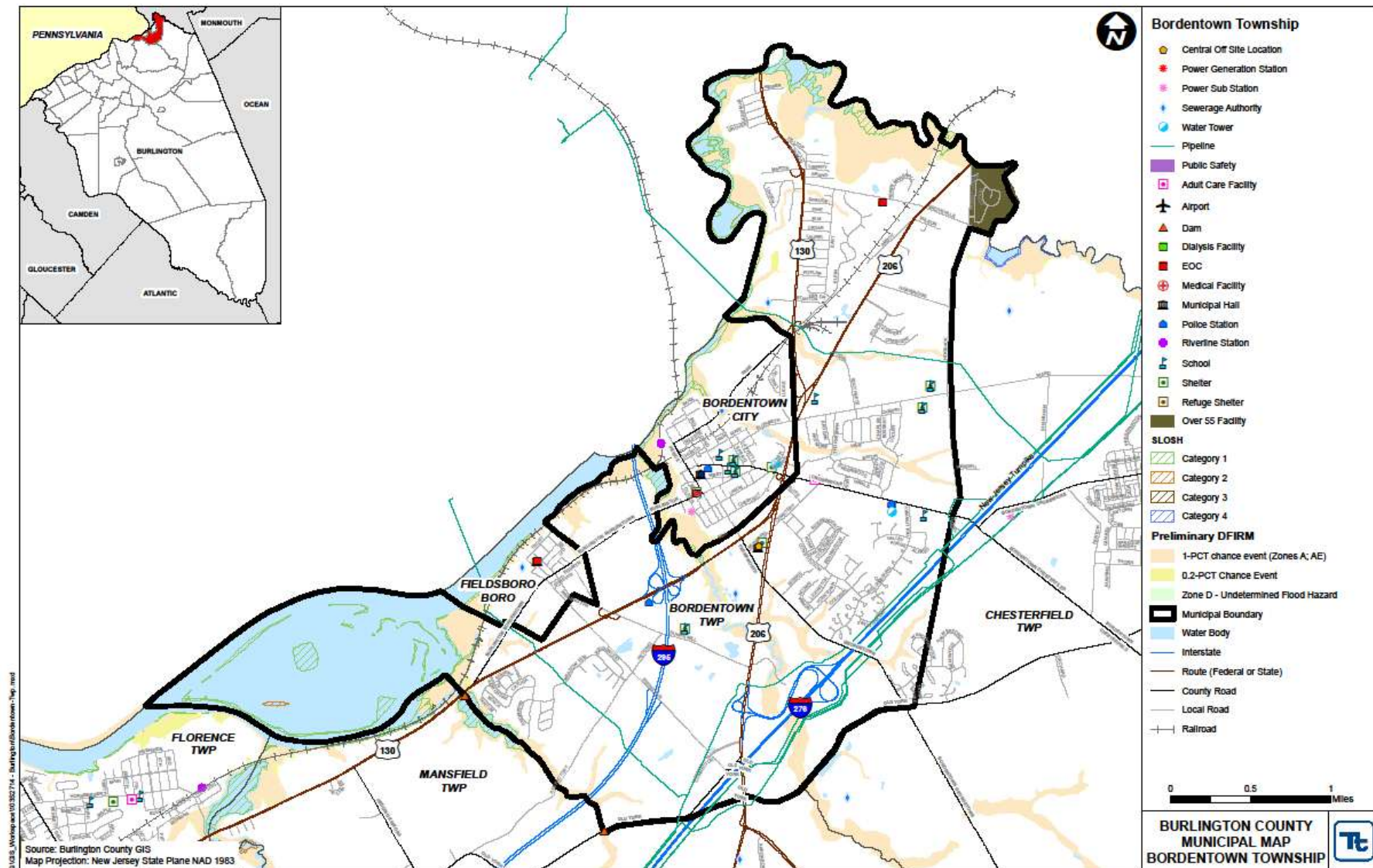
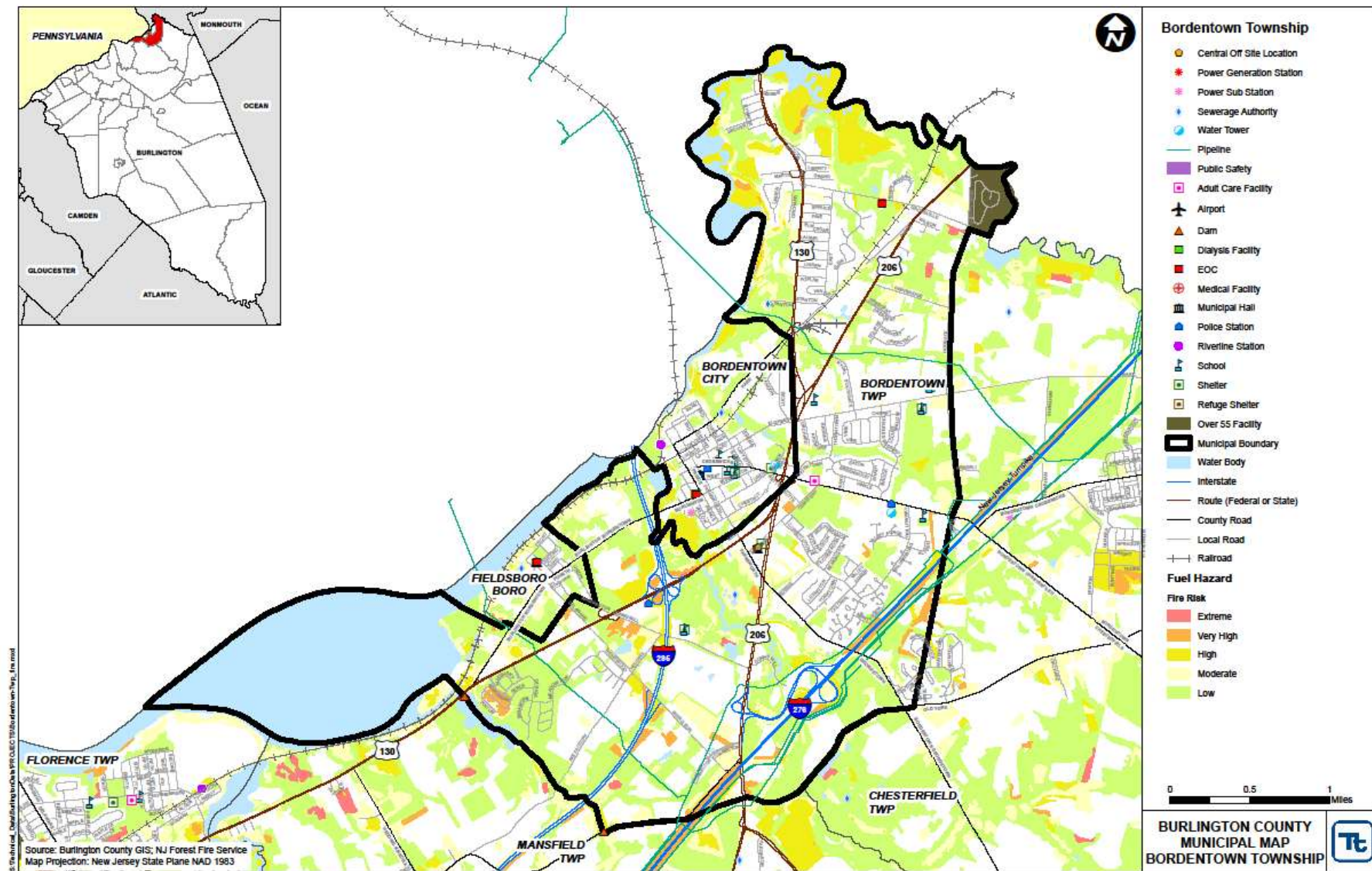


Figure 9.5-1: Bordentown Township Wildfire Fuel Exposure



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

It is the intention of Township of Bordentown 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	X

9.5.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.6 City of Burlington

This section presents the jurisdictional annex for the City of Burlington.

9.6.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Frank Caruso Title: Emergency Management Coordinator Address: City of Burlington, City Hall, 525 High Street, Burlington, NJ 08016 Phone Number: (609) 284-3105 Fax Number: (609) 386-9720 E-mail Address: fcaruso@burlingtonNJ.us	Name: Hugh Dougherty Title: Sewer and Drainage Engineer Address: Pennoni Associates, Inc., 316 Grove St., Suite 2C, Haddon Heights, NJ 08035 Phone Number: (856) 547-0505 Fax Number: (856) 547-9174 E-mail Address: HDougherty@pennoni.com

9.6.2 PROFILE

9.6.2.1 Population

The population of the City of Burlington is estimated to be 9,920 based on information gathered during the 2010 U.S. Census.

9.6.2.2 Location

The City of Burlington is located in northern Burlington County, New Jersey. The City is bordered by the Delaware River to the north and surrounded by the Township of Burlington to the west, east, and south. The City's location on the Delaware River and close proximity to Pennsylvania makes it a suburb of Philadelphia, Pennsylvania.

The City of Burlington is comprised of approximately 4 square miles, with nearly $\frac{3}{4}$ of a square mile of water.¹

9.6.2.3 Brief History

Since its founding in 1677, the City of Burlington has sheltered a host of the powerful, the spiritual, the rich and the famous. This parade of prominent Presidents, Governors, Senators, Admirals, Generals, Captains, Heroes, Bishops, Founders, and Professors includes Benjamin Franklin, Abraham Lincoln, General Ulysses S. Grant, and James Fenimore Cooper.²

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

² <http://www.tourburlington.org/Meet.html>

Burlington was first incorporated on October 24, 1693, and was reincorporated by Royal Charter on May 7, 1733. After American independence, the city was incorporated by the State of New Jersey on December 21, 1784. On March 14, 1851, the city was reincorporated and enlarged.³

Burlington was the first settlement in Burlington County, the capital of the Province of West Jersey and the county seat until 1796. As the population had been increasing to the east away from the Delaware River, the county seat was moved to Mount Holly Township, a more central location.⁴

9.6.2.4 Governing Body Format

The Mayor is elected by the City voters and performs under the Mayor-Council form of government authorized in the Optional Municipal Charter Law NJSA 40:69A.

This form provides for the direct election of the mayor, who serves a four-year term. This form is designed for a mayor to be independent of council, in charge of the administration of the municipality.

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 Council consists of seven (7) members who are elected to 4-year terms. Three (3) Council members are “At-large” and four (4) Council members are ward representatives. 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.⁵

9.6.2.5 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 City of Burlington. 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
Tatham Mews	Residential	56	Tatham Street	Blk 128 Lots 1 & 2; Blk 127 Lot 2	Flood	All Approvals

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Ingerman	Residential	64	Mitchell and Williams Street	Blk 198 Lot 1; Blk 197 Lot 1	Flood	Awaiting Funding
McNeal Harbor	Residential and Commercial	190-200	E. Pearl Street.	Blk 226 Lot 1.05, 1.06, 1.07, 1.08, 1.03 Blk 207 Lot 1.01	Flood and Environmental Hazards	Future Project
Old Water Works	Commercial		E. Pearl Blvd.	Blk 114 Lot 8.01	Flood	Seeking Approvals
Solar Farm	Commercial		Jacksonville Road	Blk 221 Lot 7, 8, 9.02, 10	Environmental hazards	Seeking Approvals

9.6.3 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	- Emergency Protective Measures - \$43,953.94 - Volunteer Labor - \$959.40 - Emergency Protective Measures - \$43,953.94 - o Labor - \$18,792.23 - o Equipment - \$16,239.70 - o Materials - \$8,151.00 - o Direct Administrative Costs - \$771.01 - Volunteer Labor - \$959.40 - o OEM Labor - \$959.40

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Winter Storm	DR-1889	Yes	February 5-6, 2010	- Emergency Protective Measures - \$56,715.21 - Labor - \$27,388.60 - Equipment - \$23,314.68 - Materials - \$5,330.96 - Contract - \$318.10 - Direct Administrative Costs - \$362.87 - Volunteer Labor - \$1,305.85 - OEM Labor - \$1305.85
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	No claim filed by the City of Burlington. The information is not available.
Winter Storm	DR-1954	Yes	December 26-27, 2010	- Emergency Protective Measures - \$33,535.12 - Labor - \$16,736.17 - Equipment - \$11,515.50 - Materials - \$3,047.58 - Direct Administrative Costs - \$2,235.87
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	- Emergency Protective Measures - \$64,499.90 - Labor - \$56,839.32 - Equipment - \$2,803.75 - Materials - \$1,127.20 - Direct Administrative Costs - \$1,668.898 - Rentals - \$2,060.65
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	- Debris Removal - \$27,031.98 - Infrastructure Damage - \$1,739.25 - Historic Public Building Damage Repair - \$225.00 - Emergency Protective Measures - \$64,499.90 - Storm Drainage System Engineering Costs - \$18,900.00 - Demolition of Public Housing Building - \$13,884.71

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.

9.6.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of the City of Burlington.

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: \$118,605,000	Frequent	48	High
Severe Storm	100-Year MRP: \$1,807,851 500-Year MRP: \$7,593,207 Annualized Loss: \$109,674	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$8,471,910 5% of GBS: \$42,359,550	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$199,998,000	Frequent	21	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$581,386 2,500-Year MRP: \$13,393,965 Annualized Loss: \$12,302	Rare	6	Low
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.

9.6.5 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 City of Burlington indicated that the municipality has an active and supportive planning, regulatory, administrative, and technical capability; and a moderate fiscal capability; above average community resiliency and community political capability; and an above average willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.6.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the City of Burlington.

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 <u>UCC</u>	X	1977		Code of the City Of Burlington Chapter 125	Construction Code Office	+		
2) Zoning Ordinance	X	12/18/98		Code of the City Of Burlington Chapter 207 Article VII	Zoning Officer & Land Use Board	+		
3) Subdivision Ordinance	X	1983		Code of the City Of Burlington Chapter 207 Article V	Land Use Board	+		
4) NFIP Flood Damage Prevention Ordinance	X	1996		Code of the City Of Burlington Chapter 170	Construction Code Office	+		
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	X	2006		Code of the City Of Burlington	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					
				Chapter 207 Article VI Chapter 207-62				
7) Stormwater Management Plan/Ordinance	X	2006		Code of the City Of Burlington Chapter 207 Article VI		+		
8) Comprehensive Plan / Master Plan/ General Plan	X	Updated 2010		Code of the City Of Burlington Chapter 207 Article V Chapter 207-9	Land Use Board	+		Completely re-done in 2010
9) Capital Improvements Plan	X				Various	+		Public Works – Sewer / Drainage and Water Departments.
10) Site Plan Review Requirements	X	1983		Code of the City Of Burlington Chapter 207 Article V Chapter 207-40	Land Use Board	+		
11) Open Space Plan	X	1998		Code of the City Of Burlington Chapter 207 Article V Chapter 207-83	Land Use Board / Zoning	+		

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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	X	2006		Code of the City Of Burlington Chapter 207 Article VI	Land Use Board	+		
13) Watershed Management or Protection Plan	X	2006		Code of the City Of Burlington Chapter 207 Article VI	Land Use Board	+		
14) Economic Development Plan	X	1997		Code of the City Of Burlington Chapter 37 Article I	Common Council	+		Urban Development Action Grant Assistance Fund
15) Comprehensive Emergency Management Plan	X	06/10/12		Code of the City Of Burlington Chapter 2 Article VII Article 2-22	Office of Emergency Management	+		City of Burlington Emergency Operations Plan
16) Emergency Response Plan And EOP Plan	X	06/10/12		Code of the City Of Burlington Chapter 2 Article VII Article 2-22	Office of Emergency Management	+		City of Burlington Emergency Operations Plan
17) Post Disaster Recovery Plan	X	06/10/12		Code of the City Of Burlington Chapter 2 Article VII Article 2-22	Office of Emergency Management	+		City of Burlington Emergency Operations Plan

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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	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A							
Fire Prevention Ordinance	X	1997		City of Burlington Code Chapter 162	Bureau of Fire Prevention	+		

9.6.5.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the City of Burlington.

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	Dept. of Housing & Community Development and Dept. of Engineering Alaimo Group Consulting Engineers Pennoni Associates, Inc. Environmental Resolutions, Inc. Remington, Vernick
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Dept. of Housing & Community Development and Dept. of Engineering Alaimo Group Consulting Engineers Pennoni Associates, Inc. Environmental Resolutions, Inc. Remington, Vernick
3) Planners or engineers with an understanding of natural hazards	Y	Dept. of Housing & Community Development and Dept. of Engineering Alaimo Group Consulting Engineers Pennoni Associates, Inc. Environmental Resolutions, Inc. Remington, Vernick
4) NFIP Floodplain Administrator	Y	Construction Code Office Howard Wilkins
5) Surveyor(s)	Y	Dept. of Engineering Alaimo Group Consulting Engineers
6) Personnel skilled or trained in "GIS" applications	Y	County of Burlington Burlington County OEM
7) Scientist familiar with natural hazards	Y	Dept. of Public Works-Sewer/ Drainage Division Pennoni Associates, Inc
8) Emergency Manager	Y	Dept. of Public Safety Frank Caruso, Emergency Mgt. Coord.
9) Grant Writer(s)	Y	Various
10) Staff with expertise or training in benefit/cost analysis	Y	CFO, Finance Dept. Kenneth MacMillan, CFO

9.6.5.3 Fiscal Capability

The table below summarizes financial resources available to the City of Burlington. CFO to Complete.

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	No
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	Don't know
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	

9.6.5.4 Community Classifications

The table below summarizes classifications for community program available to the City of Burlington.

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	8	04/01/98
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	Certified	06/14/13
Firewise	N/A	N/A

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the City of Burlington'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/>

9.6.6 MITIGATION STRATEGY

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

9.6.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.6.7. 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			Ongoing. These identified roadways will continue to be monitored to ensure they remain passable.
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood-proof these properties		X	X			Ongoing. Various studies completed regarding the levee system, Kennedy Lake, Storm Water Pump Stations and Tidegates.
Replace broken and malfunctioning storm gates on the Assiscunk Creek which is causing flooding in the New Yorkshire section of the City. It also impacts the local fire department		X	X			Ongoing. Replaced two gates at Mitchell Court. Other tidegates / outfalls investigated and in need of repair.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Replace or install flapper valves on storm drains along the Assiscunk Creek and Delaware River.		X	X			Ongoing. One gate replaced at US Pipe and eight tide gates were repaired behind Joey's Catering on Jacksonville Road at Paddy James' Ditch, High Street at Armory, Taylor Street near lake, levee near Burlington Court Apartments, levee near Mazur's, Pearl street near Curtin's Marina and High street at the Delaware River. Other tidegates / outfalls investigated and in need of new or repair.

9.6.6.2 Hazard Vulnerabilities Identified

Officials at the City of Burlington noted that most of the City lies within the 1% annual chance flood area. Potential for flooding includes the Delaware River, Assiscunk Creek, JFK Lake, and Pope's Run. These floods often occur during hurricanes and other severe storms when combined with high tide.

In the City of Burlington, an estimated 5,560 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 55% is located within the 1% annual chance flood area. A total of \$761,446,000 (53.7%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

The City of Burlington has a total of 1,058 NFIP policies, 852 of which are located within the 1% annual chance flood area. FEMA has identified 6 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)
Burlington (C)	1058	120	\$501,475	6	0	852	1019	39

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⁾
Municipal	Burlington City	EOC	X	X	8.0	12.2	480
BURLINGTON BRISTOL BRIDGE POLICE DEPT	Burlington City	Police	X	X	9.3	17.3	480

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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⁾
BURLINGTON CITY POLICE	Burlington City	Police	X	X	7.0	8.0	480
NJSP MARINE POLICE	Burlington City	Police		X			
BURLINGTON CITY FIRE DEPARTMENT	Burlington City	Fire	X	X	8.0	12.2	480
BURLINGTON CITY FIRE DEPARTMENT	Burlington City	Fire	X	X	8.0	12.2	480
MITCHELL FIRE CO #3	Burlington City	Fire	X	X	9.4	17.5	480
NEPTUNE HOSE CO #5	Burlington City	Fire	X	X	8.8	15.1	480
NIAGARA HOSE CO 6	Burlington City	Fire	X	X	10.4	26.8	480
ENDEAVOR EMERGENCY SQUAD	Burlington City	Fire		X			
ALL SAINTS SCHOOL	Burlington City	School	X	X	7.3	39.9	480
WILBUR WATTS INTERMEDIATE SCHL	Burlington City	School	X	X	7.7	43.1	480
HOLY LIGHT CHRISTIAN ACADEMY	Burlington City	School	X	X	5.3	28.8	480
BURLINGTON BOARD OF EDUCATION	Burlington City	School	X	X	9.0	59.3	480
BURLINGTON CITY HIGH SCHOOL	Burlington City	School	X	X	6.4	34.8	480
ST MARY'S HALL-DOANE ACADEMY	Burlington City	School		X			
CAPTAIN JAMES LAWRENCE SCHOOL	Burlington City	School		X			
ELIAS BOUDINOT ELEMENTARY SCHL	Burlington City	School		X			

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⁾
SAMUEL SMITH ELEMENTARY SCHOOL	Burlington City	School		X			
Home For Aged Women	Burlington City	Senior	X	X	23.8	31.1	
BURLINGTON CITY MUNICIPAL BUILDING	Burlington City	Municipal	X	X	22.7	27.5	

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.

9.6.7 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
BTC-1	WWTP Stormwater Pump Upgrades - Replace aging 60hp and 100 hp pumps with two new 150 hp pumps.	Existing	Flood	1-2 2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$780,000	HMGP, NJEIT	DOF	High	SP
BTC-2	Tidegate Mitigation - Install tidegate units on outfall pipes that do not have existing tidegates installed.	New	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$267,000	HMGP	DOF	High	SP
BTC-3	PHASE 1 Assiscunk Creek Levee Improvements Phase 1 - including Columbus Pak Storm Pipe tidegate replacement - Tidegate replacement and creek-side clearing	Existing	Flood	2-1 3-1 3-2	Public Works and Engineering	High	High \$425,730	CDBG	Design in progress	High	SP
BTC-4	PHASE 2 Assiscunk Creek Levee Mitigation - Armor the river side slopes and upgrade interior drainage pipes.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$2,171,735	HMGP NJEIT	DOF	High	SP
BTC-5	Riverbank near Watkins Alley - Replace inlet and pipes, install a tidal shock valve and restore curbs and sidewalks.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$300,000	TBD	DOF	Medium	SP
BTC-6	Riverbank and Wood Street - Replace inlet and pipes, and restore curbs, pavement and sidewalks	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$115,000	TBD	DOF	Medium	SP
BTC-7	Mitchell Court Outfalls (west side of Assiscunk Creek).	Existing	Flood	2-1 3-1	Public Works / Sewer and	High	High \$300,000	TBD	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
	Replace pipe, install tideflex check valves and restore disturbed areas.			3-2	Drainage Department / NJOEM						
BTC-8	Mitchell Avenue Outfalls (east side of Assiscunk Creek) - Replace pipe, install tideflex check valves and restore disturbed areas.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$300,000	TBD	DOF	Medium	SP
BTC-9	Mitchell Avenue Pump Station Storm Event Bypass System - Provide bypass pumping to handle storm surges	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$260,000	TBD	DOF	Medium	SP
BTC-10	Kennedy Lake Dredging - Dredge the lake at the low-end of the drainage area to maximize stormwater storage.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$4,000,000	TBD	DOF	Low	PR
BTC-11	Upgrade to various outfalls along the Delaware River and Assiscunk Creek - Replace aging flapper tide gates with tideflex check valves.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$1,500,000	TBD	DOF	Low	SP
BTC-12	Mobile Emergency Bypass Pump System - Purchase a 12" pump with trailer with associated hoses and piping.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	Medium	High \$100,000	TBD	DOF	Low	ES
BTC-13	Scott, Pine, McNeill Streets and Route 130 Drainage Improvements - Replace inlets and pipe including undersized pipe under Route 130 and restore curbs, sidewalks and pavement.	Existing	Flood	2-1 3-1 3-2	Public Works / Sewer and Drainage Department / NJOEM	High	High \$405,000	TBD	DOF	Low	SP
BTC-14	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, NJOEM, FEMA	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
	Disaster preparedness Hazard mitigation										
BTC-15	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
BTC-16	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
BTC-17	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
BTC-18	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
BTC-19	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
BTC-20	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
BTC-21	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
BTC-22	Address dangerous trees	N/A	Severe	1-5	Municipal DPW	Medium	Low/Medium	Municipal	Short Term	Medium	NR



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
	threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.		Storm, Severe Winter Storm	4-1				Budget			PP
BTC-23	Develop study for identifying specific vulnerabilities associated with vulnerable critical facilities noted in Section 9.6.6.2 of this annex	Existing	Flood	1-1 1-2 1-3 2-1 3-1 3-2	Lead: Twp. OEM Support: Twp. Engineer	High	Medium	Municipal Budget, FEMA grants	Short	High	PR PP
BTC-24	Appoint a committee of relevant stakeholders (e.g. police, fire, etc.) to explore feasible mitigation activities for the City's identified vulnerable critical facilities	Existing	Flood	1-1 1-2 1-3 2-1 3-1 3-2	Lead: Twp. OEM Support: Twp. PD, Fire, Schools	High	Low	Municipal Budget	Short	High	PR 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.

9.6.8 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)
BTC-1	4	High	High	Yes	Yes	No	High
BTC-2	3	High	High	Yes	Yes	No	High
BTC-3	3	High	High	Yes	Yes	Yes	High
BTC-4	3	High	High	Yes	Yes	No	High
BTC-5	3	High	High	Yes	Yes	No	Medium
BTC-6	3	High	High	Yes	Yes	No	Medium
BTC-7	3	High	High	Yes	Yes	No	Medium
BTC-8	3	High	High	Yes	Yes	No	Medium
BTC-9	3	High	High	Yes	Yes	No	Medium
BTC-10	3	High	High	Yes	Yes	No	Low
BTC-11	3	High	High	Yes	Yes	No	Low
BTC-12	3	Medium	High	Yes	Yes	No	Low
BTC-13	3	High	High	Yes	Yes	No	Low
BTC-14	3	Medium	Medium	Yes	Yes	No	High
BTC-15	1	Medium	Medium	Yes	Yes	Yes	Medium
BTC-16	3	Medium	Medium	Yes	Yes	Yes	Medium
BTC-17	1	Medium	Low	Yes	Yes	Yes	High
BTC-18	1	High	Low – High	Yes	Yes	No	High
BTC-19	2	Medium	Medium	Yes	Yes	Yes	Medium
BTC-20	3	Medium	Low	Yes	Yes	Yes	Medium
BTC-21	3	Medium	Low	Yes	Yes	Yes	High
BTC-22	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
BTC-23	6	Medium	Low	Yes	Yes	Yes	Medium
BTC-24	6	High	Medium	Yes	Yes	No	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.6.8.1 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.

9.6.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.6.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the City of Burlington 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 City of Burlington has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.6-1: Burlington City Flood Exposure Map

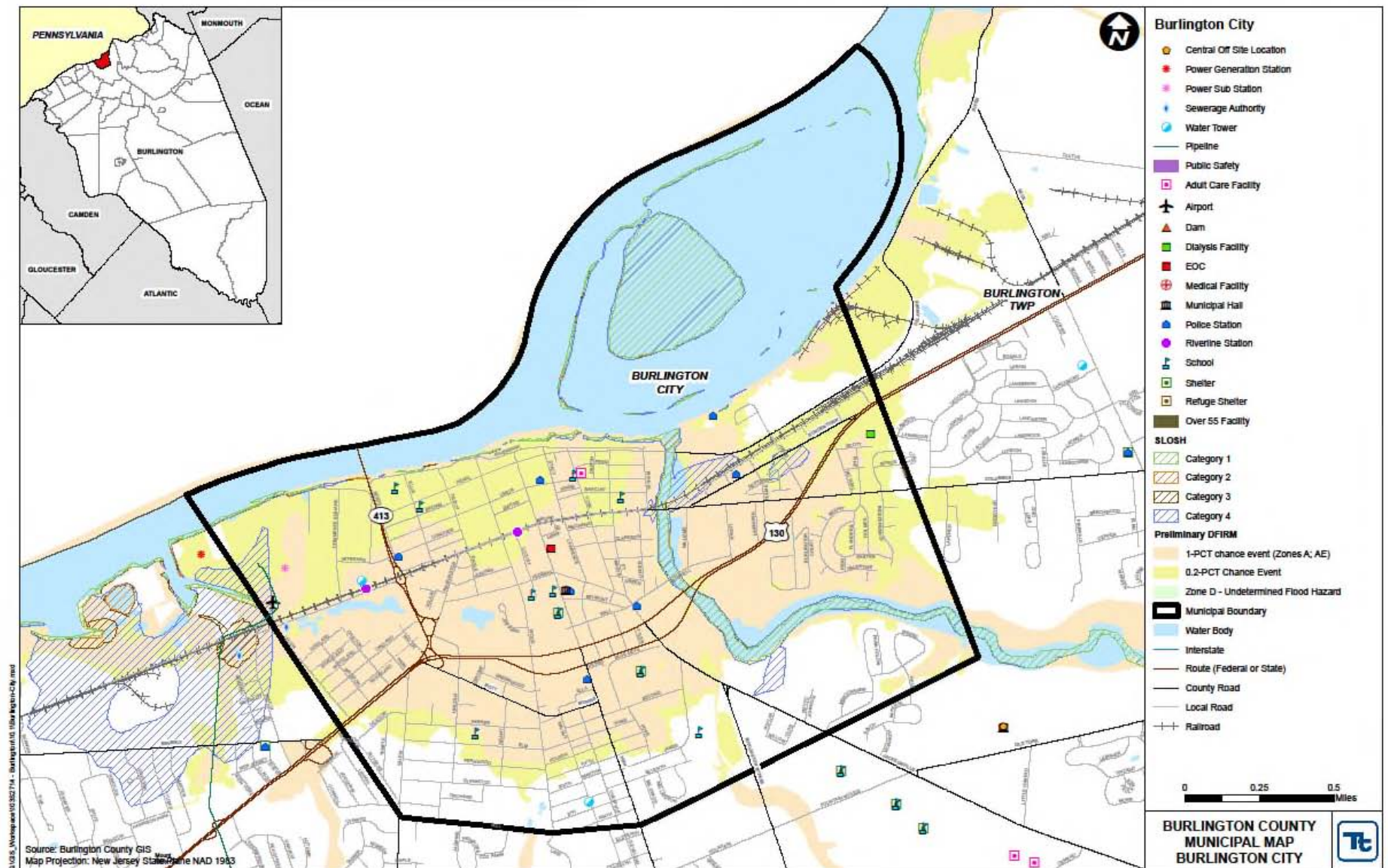
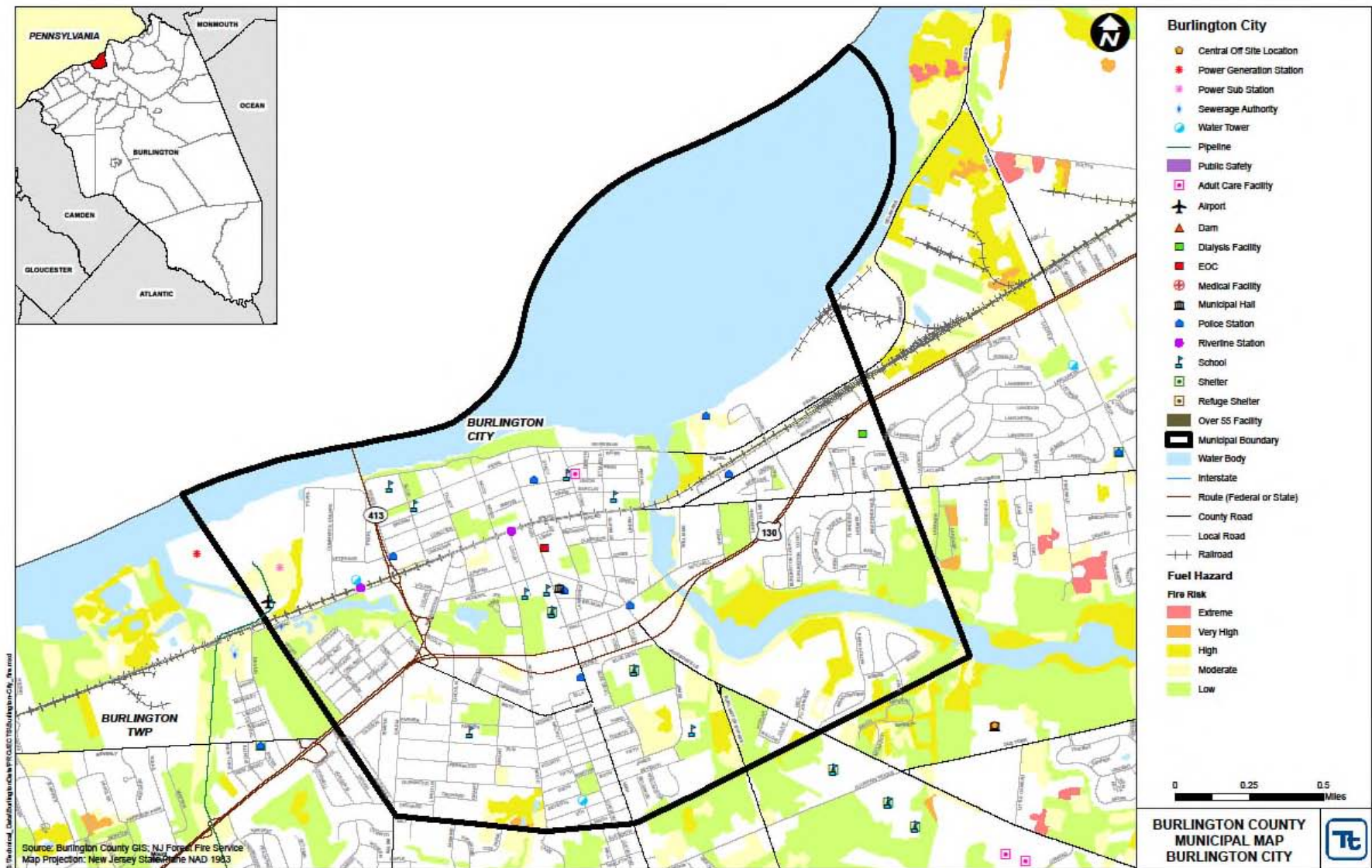


Figure 9.6-2: Burlington City Wildfire Fuel Exposure



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

It is the intention of the City of Burlington is to incorporate mitigation planning as an integral component of daily municipal operations. The City indicated that the 2008 Burlington County HMP has been directly incorporated into a variety of planning mechanisms, including adopting the 2008 Plan as the official plan of the City of Burlington and incorporating mitigation planning in the City's Flood Protection and Stormwater Management Ordinances. The following table contains a list of additional 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
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

9.6.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.7 Township of Burlington

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

9.7.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Kevin A. Shoppas Title: Emergency Management Coordinator Address: 851 Old York Rd., Burlington Twp., NJ 08016 Phone Number: (609) 239-5855 Fax Number: (609) 386-4840 E-mail Address: kshoppas46@burltwppd.com	Name: Scott Hatfield Title: Township Engineer Address: 851 Old York Rd., Burlington Twp., NJ 08016 Phone Number: (609) 239-5836 Fax Number: (609) 387-5178 E-mail Address: shatfield@twp.burlington.nj.us

9.7.2 PROFILE

9.7.2.1 Population

The population of the Township of Burlington is estimated to be 22,594, based on information gathered during the 2010 U.S. Census.

9.7.2.2 Location

Burlington Township is centrally located in the northern portion of Burlington County along the Delaware River. The Township is bordered by Florence to the east, Springfield to the southeast, Westampton to the south, Willingboro to the west, and Edgewater Park to the northwest. In addition, the Township is bordered by Bristol Pennsylvania across the Delaware River to the north.

9.7.2.3 Brief History

Burlington was formed as a "Towne" by the West Jersey proprietors, and was interrelated to Burlington City during its early days. Burlington was incorporated as one of New Jersey's initial 104 townships by an Act of the New Jersey Legislature on February 21, 1798.¹

9.7.2.4 Governing Body Format

The government within the Township of Burlington consists of a Mayor and Council, authorized 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.

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

The council is the legislative body of the municipality and consists of seven members. 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

9.7.2.5 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 of Burlington. Refer to the map in section 9.7.10 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
Country Woods II	Residential	41	Vaughn Lane and Jessie Lane	Block 144.21, .22, and .19 All Lots	None	Under Construction
River Walk	Residential	250	Beverly Road	Block 98, Lots 7,8	Hazardous Materials (Soil Contamination)	Under construction – hazard mitigated during planning
Springside Apartments Mend Project	Residential	75	1508 Mt. Holly Road	Block 90 Lot 28, Block 114 lots 1.01, 3	Hazardous Materials (Asbestos)	Under construction – hazard abated during construction
Chick-Fil-A 5,187 Sq Ft	Commercial	1	1817 Route 541	Block 116, Lot 2	None	Under Construction
Shop Rite 91,300 Sq Ft	Commercial	1	1817 Route 541	Block 116, Lot 2	None	Plans approved, not started
Walmart Remodel	Commercial	1	2106 Route 541	Block 119, Lots 1.01, 1.02, 3, 4	None	Under construction
Burlington Center	Commercial	Unknown	2501 Route 541	Block 125, Lot 1	None	Planning stages
Islamic Academy	Commercial	1	613 Sunset Road	Block 109.31, Lot 5.03	None	House of worship/ Parochial school
Burlington Neck	Commercial	3	Neck Road		None	Under Construction

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

9.7.3 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	Flood damage and roadways, evacuations,
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	Closed roadways, snow removal issues
Winter Storm	DR-1889	Yes	February 5-6, 2010	Closed roadways, snow removal issues
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Minor flooding
Winter Storm	DR-1954	Yes	December 26-27, 2010	Closed roadways, snow removal issues
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	High winds, heavy rain, flood damage, roadways and damaged homes and power outages
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Wind damage, power outages, evacuations and sheltering

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.

9.7.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$31,789,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$3,934,147 500-Year MRP: \$17,322,137 Annualized Loss: \$245,224	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$19,509,900 5% of GBS: \$97,549,500	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$1,688,100,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$1,339,142 2,500-Year MRP: \$31,217,900 Annualized Loss: \$28,952	Rare	6	Low
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.

9.7.5 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 Burlington 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.

9.7.5.1 Legal and Regulatory Capability

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

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	3-24-1976		318	L&I	+		
2) Zoning Ordinance	X	12-27-1978		330	L&I (Zoning Officer), Engineering	+		
3) Subdivision Ordinance	X	12-26-1978		330-71	Engineering	+		
4) NFIP Flood Damage Prevention Ordinance	X	7-13-1977		282	L&I, Engineering	+		
5) Growth Management	X	12-26-1978		330-67	Engineering	+		
6) Floodplain Management / Basin Plan	X	7-13-1977		330-91, 282	L&I, Engineering	+		
7) Stormwater Management Plan/Ordinance	X	12-26-1978		330-87 & 517	Engineering	+		
8) Comprehensive Plan / Master Plan/ General Plan	X			330-127	Engineering	+		
9) Capital Improvements Plan	X	4-23-13			Treasures Office/Engineering	+		
10) Site Plan Review Requirements	X	12-26-1978		330-127	Planning and Zoning	+		
11) Open Space Plan	X	12-26-1978		330-127	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					
12) Stream Corridor Management Plan	X	12-26-1978		330-94	L&I, Engineering	+		
13) Watershed Management or Protection Plan	X	12-26-1978		330-87	Engineering	+		
14) Economic Development Plan	X	12-26-1978		330-127	Planning Board	+		
15) Comprehensive Emergency Management Plan	X	10/2011			BT OEM	+	+	
16) Emergency Response Plan	X	10/2011			BT OEM	+	+	
17) Post Disaster Recovery Plan			X					To be completed during this cycle
18) Post Disaster Recovery Ordinance								None
19) Real Estate Disclosure Requirement								None
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								As needed

9.7.5.2 Administrative and Technical Capability

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

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	Dept. Of Engineering
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	License and Inspections
3) Planners or engineers with an understanding of natural hazards	Y	Dept. Of Engineering
4) NFIP Floodplain Administrator	Y	License and Inspection
5) Surveyor(s)	N	Contract Service As Needed
6) Personnel skilled or trained in GIS applications	Y	Dept. Of Engineering
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Dept. Of Law and Public Safety
9) Grant Writer(s)	N	
10) Staff with expertise or training in benefit/cost analysis	Y	Dept. Of Engineering

9.7.5.3 Fiscal Capability

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

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	Yes
9) Withhold public expenditures in hazard-prone areas	Unk
10) State mitigation grant programs	Yes
11) Other	Unk

9.7.5.4 Community Classifications

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

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 Burlington'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/>

9.7.6 MITIGATION STRATEGY

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

9.7.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.7.7. 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		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		X			Listed as no progress as of this date no properties have been identified. This action will be reviewed once the new official FEMA/NFIP flood maps are obtained.
Work With PSE&G to keep trees and limbs cut back on the west end of town where the areas is prone to Wind shear and bad storms		X	X			PSE&G has been cutting back trees along high tension wires and roads.
Work With State agencies to keep the drainage route under Route 130 open along what is known as Tanners Run. This will decrease the likelihood flooding at Route 130 and Beverly Road area.			X			The pipe running under Route 130 at Beverly road Jughandle is key to get water along Tanners Run conveyed to the Delaware River.
Keep drainage flowing along Tanners Run. Study the need for increased drainage capabilities along this area. This will also help the flooding along Route 130 and Beverly Road area.	X					Budget constraints have prevented this initiative moving forward
Encourage the County to do a study of the Assiscunk Creek From Florence Township Line to the Delaware River. This study is to see about the need for a cleaning project to remove debris along this stretch of the creek.					X	This is a large project that would need to cover many Towns. This is why we would seek the assistance of Burlington County OEM to achieve this mitigation strategy. Aerial video of waterway is planned to be taken in December 2013.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Purchase Emergency Generators for all pump stations and the Township Garage, to offset downtime from power outages as suffered during Sandy.		X				Submitted grant application for hazard mitigation under Hurricane Sandy. Awarded \$177,000 which will partially cover the cost of this project.
Work with Dam engineers to drill the upper and lower Lake dams for their emergency operations plan.		X	X			This is required by NJDEP and in progress for 2013. This is something that must be done every year and would like to find outside company to put fully functional exercise together in up and coming years

9.7.6.2 Hazard Vulnerabilities Identified

Officials from the Township of Burlington noted numerous areas where hazard vulnerabilities have been identified. Flooding occurs along the Assiscunk Creek and the Delaware River along Linden Road. In addition, flooding along Route 130 and Beverly road occurs with heavy rain and an overflow or breach of the lower and upper Sylvan Lakes Dams threaten the Township.

Officials also cited non-flood related issues. These issues include the shear winds along the Delaware River which causes downed trees and limbs along Beverly Road, loss of power to critical infrastructure that do not have back-up power sources, and soil erosion in the area of the Tanners Run Development.

In the Township of Burlington, an estimated 571 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 \$79,372,000 (2.4%) 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 Burlington has a total of 107 NFIP policies, 35 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)
Burlington (T)	107	21	\$254,229	1	0	35	45	62

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	-	-	-	-	-

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.

9.7.7 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
BTT-1	Work With PSE&G to keep trees and limbs cut back on the west end of town where the areas is prone to Wind shear and bad storms	Yes	Storm	1-1 3-1	DPW	Low	Low	Budget	Short Term	Medium	PP
BTT-2	Change ordinance to increase the height of building in the flood plains.	New	Flooding	1-1 1-4	L&I	High	Medium	N/A	Short Term	Medium	SP
BTT-3	Conduct Clean Out of the Assiscunk Creek from Township Line to Delaware River	Yes	Flood	3-1 4-2	Engineering	High	High	FMA	Short Term DOF	High	NR
BTT-4	Provide alternate funding for Private residence along Tanners Run	Yes	Erosion	1-1 3-1	Engineering	Medium	Medium	HMA Grants	Short Term DOF	Low	PE
BTT-5	Prepare and Conduct Drills for Emergency Operations Plan of Upper and Lower Sylvan Lakes Damns	Yes	Flooding	1-1 3-1	BT OEM	Medium	Medium	Budget	Short Term	High	PR
BTT-6	Purchase Generators for all critical facilities, including sewer and water pump stations, Township Garage, and shelter areas.	N/A	Infrastructure	1-2 1-5 3-2	DPW & Engineering	High	Medium	HMGP, NJOEM	Short Term	High	ES
BTT-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
BTT-8	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, FEMA	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										
BTT-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
BTT-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
BTT-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
BTT-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	Low	Municipal Budget	On-going	Medium	PR
BTT-13	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
BTT-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

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.

9.7.8 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)
BTT-1	2	Low	Low	Yes	No	Yes	Low
BTT-2	2	High	Medium	Yes	No	Yes	Medium
BTT-3	2	High	High	Yes	Yes	No	High
BTT-4	2	Medium	Medium	Yes	Yes	No	Low
BTT-5	2	Medium	Medium	Yes	Yes	Yes	High
BTT-6	3	High	Medium	Yes	Yes	No	High
BTT-7	7	Medium	Low	Yes	Yes	Yes	Medium
BTT-8	3	Medium	Medium	Yes	Yes	No	High
BTT-9	1	Medium	Medium	Yes	Yes	Yes	Medium
BTT-10	1	Medium	Low	Yes	Yes	Yes	High
BTT-11	1	High	Low – High	Yes	Yes	No	High
BTT-12	2	Medium	Low	Yes	Yes	Yes	Medium
BTT-13	3	Medium	Low	Yes	Yes	Yes	Medium
BTT-14	3	Medium	Low	Yes	Yes	Yes	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.7.8.1 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.

9.7.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.7.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Burlington 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 Burlington has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.7-1: Burlington Township Flood Exposure Map

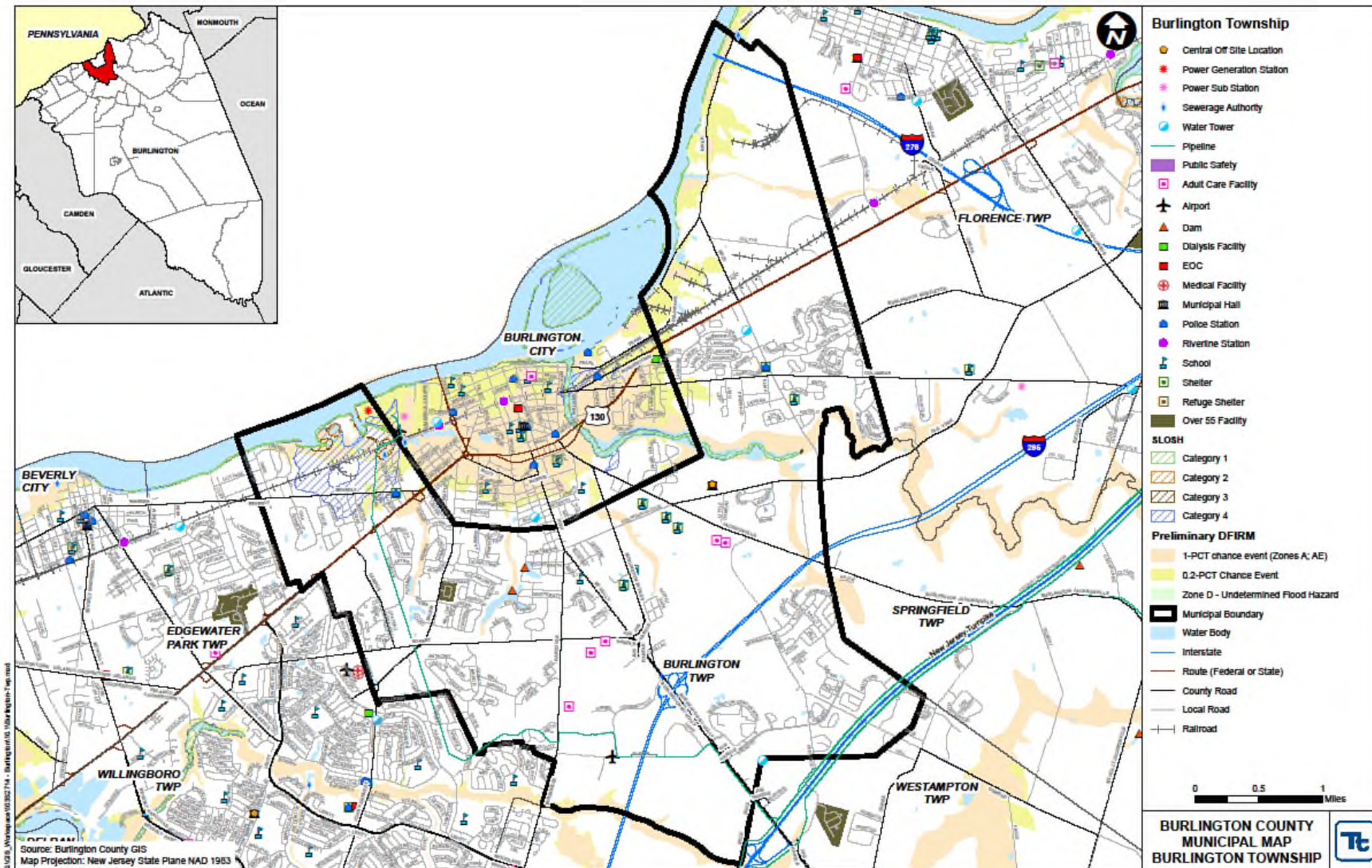
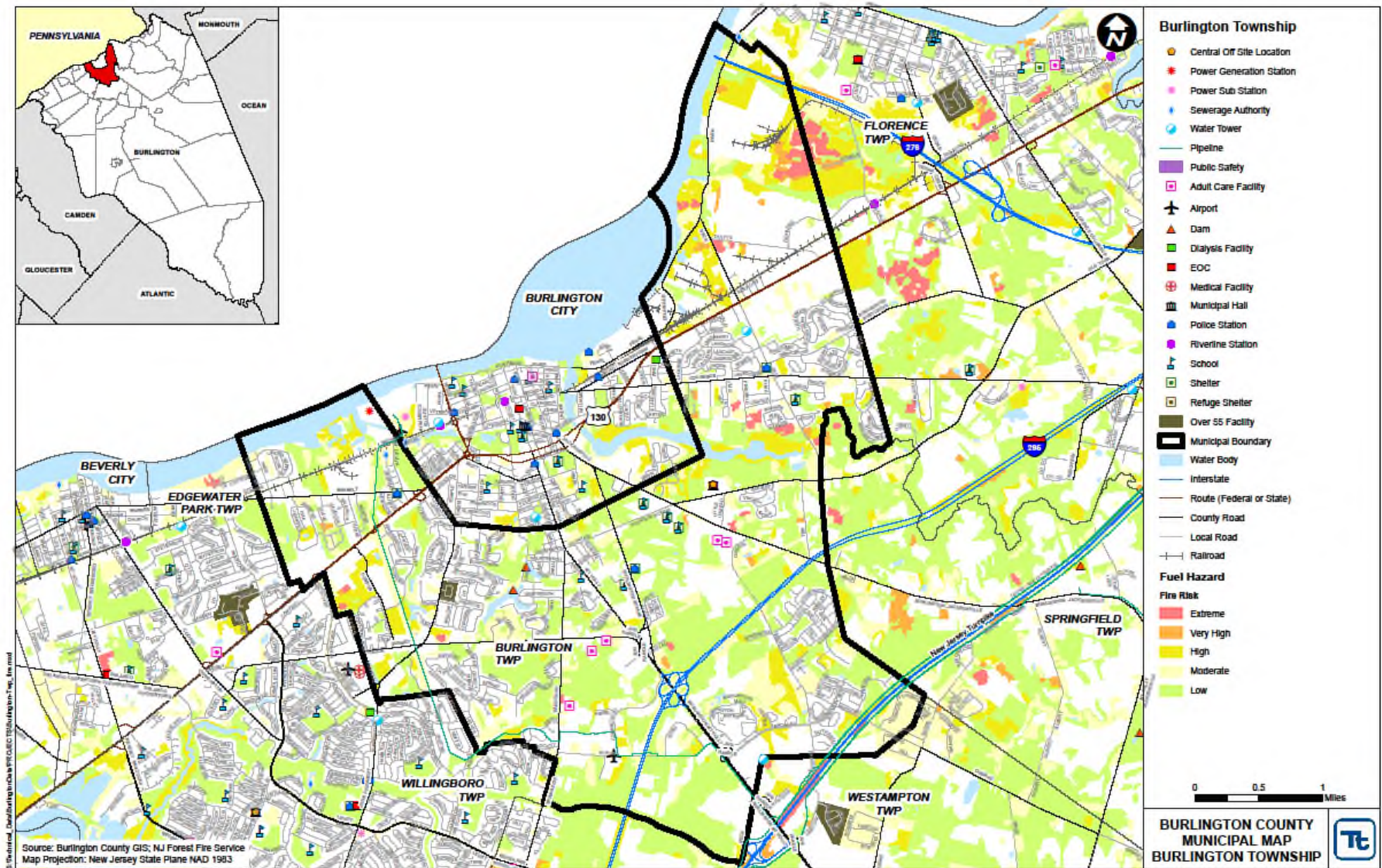


Figure 9.7-2: Burlington Township Wildfire Fuel Exposure



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

It is the intention of the Township of Burlington is 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
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

9.7.12 ADDITIONAL COMMENTS

There are no additional comments at this time.



9.8 Township of Chesterfield

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

9.8.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Kyle Wilson Title: Chief of Police/OEM Address: 300 Bordentown Chesterfield Rd., Chesterfield, NJ 08515 Phone Number: (609) 209-3270 Fax Number: (609) 298-8825 E-mail Address: chiefwilson@chesterfieldtwp.com	Name: Greg Lebak Title: DPW Director Address: 300 Bordentown Chesterfield Rd., Chesterfield, NJ 08515 Phone Number: (609) 298-1668 Fax Number: (609) 298-0469 E-mail Address: greg@chesterfieldtwp.com

9.8.2 PROFILE

9.8.2.1 Population

The population of the Township of Chesterfield is estimated to be 7,699, based on information gathered during the 2010 U.S. Census.

9.8.2.2 Location

The Township of Chesterfield is located in the north-eastern tip of Burlington County, NJ. It is bordered by the Township of Bordentown to the north-west, Mansfield to the west, Springfield to the southwest, and North Hanover to the south-east. To the northeast, it is bordered by the Mercer County municipality of Hamilton. It encompasses approximately 21 square miles, of which just under 1/5 of a mile is water.¹

9.8.2.3 Brief History

Chesterfield Township was settled in 1677 by Quakers that arrived from Hull, England, escaping persecution by King Charles II. After arriving in Burlington aboard the fly-boat *Martha* in October 1677, the Quakers settled the farmland of West Jersey along the Delaware River. Our township was originally an informal constabulary named for an English nobleman, Lord Chesterfield, and on November 6, 1688, the township of Chesterfield was officially established by decree of the county court.²

9.8.2.4 Governing Body Format

The Township of Chesterfield is governed by the Township form of New Jersey Municipal Government. A Township Committee of three members is elected, at-large. They serve staggered three year terms. The

¹ http://www.census.gov/geo/maps-data/data/docs/gazetteer/county_sub_list_34.txt

² <http://www.chesterfieldtwphistoricalsoc.org/>

Township Committee then elects a mayor for a one year term. The mayor chairs the Committee with “voice and vote” and is the head of this municipal form of government.

The Township Committee serves as the legislative body of the municipality. In addition, the Committee has all executive responsibilities of the municipality not placed in the office of the mayor.³

9.8.2.5 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
Traditions @ Chesterfield	Res/Comm	284	Old York Rd	Block 206 lots 24.01/25.02/25.01	None	Prelim approval

9.8.3 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	\$11,008
Winter Storm	DR-1889	Yes	February 5-6, 2010	\$12,650
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	0
Winter Storm	DR-1954	Yes	December 26-	\$14,620

³ <http://www.njslom.org/types.html#Township>

SECTION 9.8: TOWNSHIP OF CHESTERFIELD

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
			27, 2010	
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	\$12,330
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	\$26,340

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.

9.8.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$8,947,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$549,141 500-Year MRP: \$3,424,906 Annualized Loss: \$57,304	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$2,999,500 5% of GBS: \$14,997,500	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$420,204,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$183,065 2,500-Year MRP: \$4,465,191 Annualized Loss: \$4,065	Rare	6	Low
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.

9.8.5 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 Chesterfield indicated that the municipality has low to 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.

9.8.5.1 Legal and Regulatory Capability

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

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	2009		C- 94	Construction	+	+	
2) Zoning Ordinance	Y	1988		C130- art 3	Zoning	+	+	
3) Subdivision Ordinance	Y	1998		C 130	Planning board	+	+	
4) NFIP Flood Damage Prevention Ordinance	Y	1986		C118	Planning/const ruction	+	+	
4a) Cumulative Substantial Damages	N		Y					
4b) Freeboard	N		Y					
5) Growth Management	Y	1998		C130 Art17	Twp committee	+	+	
6) Floodplain Management / Basin Plan	Y	1986		C118-8	Construction	+	+	
7) Stormwater Management Plan/Ordinance	Y	2006		C130-75	Construction	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	Y	2008		Master plan	Planning board	+	+	
9) Capital Improvements Plan	Y	2013		C130	Twp Committee	+	+	
10) Site Plan Review Requirements	Y	2013		C130	Planning Board	+	+	
11) Open Space Plan	Y	2003		C146	Twp. Committee	+	+	

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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	1998		C130	Planning Board	+	+	
13) Watershed Management or Protection Plan	N		Y					
14) Economic Development Plan	N		Y					
15) Comprehensive Emergency Management Plan	Y	2013		EOP	OEM	+	+	
16) Emergency Response Plan	Y	2013		EOP	OEM	+	+	
17) Post Disaster Recovery Plan			Y					
18) Post Disaster Recovery Ordinance			Y					
19) Real Estate Disclosure Requirement			Y					
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	-							

9.8.5.2 Administrative and Technical Capability

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

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	ERI
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	ERI
3) Planners or engineers with an understanding of natural hazards	Y	ERI
4) NFIP Floodplain Administrator	Y	Construction
5) Surveyor(s)	Y	ERI
6) Personnel skilled or trained in GIS applications	Y	ERI
7) Scientist familiar with natural hazards	N	-
8) Emergency Manager	Y	OEM
9) Grant Writer(s)	Y	ERI
10) Staff with expertise or training in benefit/cost analysis	Y	CFO

9.8.5.3 Fiscal Capability

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

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	-

9.8.5.4 Community Classifications

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

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

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Chesterfield'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/>

9.8.6 MITIGATION STRATEGY

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

9.8.6.1 Past Mitigation Actions/Status

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

9.8.6.2 Hazard Vulnerabilities Identified

In the Township of Chesterfield, an estimated 22 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 \$2,784,000 (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 Township of Chesterfield has a total of 10 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 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)
Chesterfield (T)	10	2	\$2,128	0	0	0	0	10

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 State

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.

9.8.7 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
CH-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 the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. • 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 email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction	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

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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
	measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.										
CH-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
CH-3	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
CH-4	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	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget, FEMA HMA and HLS grant programs	Short-Long Term DOF	Medium	PR
CH-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	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
CH-6	Purchase, relocate, or elevate structures located in hazard-prone areas. Phase 1: Identify appropriate candidates based on cost-effectiveness.	Existing	Flood, Severe Storm	2-1 2-2 3-1	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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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
	Phase 2: Begin implementation of the determined action based on available funding.										
CH-7	Implement permit fee waivers for installation of backup power for private property.	N/A	Severe Storm	1-1 1-4 3-1	Municipal Council	Medium	Low	Municipal Budget	Short	H	PR
CH-8	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	H	PR
CH-9	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption in conjunction with property owners and utility companies.	N/A	Severe Storm	1-5 4-1	Municipal Code Enforcement	Medium	Low	Municipal Budget	Short	H	PR
CH-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	OG	Medium	PR
CH-11	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
CH-12	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
CH-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

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.

9.8.8 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)
CH-1	3	Medium	Medium	Yes	Yes	No	Medium
CH-2	1	Medium	Medium	Yes	Yes	No	High
CH-3	1	Medium	Low	Yes	Yes	No	High
CH-4	1	Medium	Medium	Yes	Yes	No	Medium
CH-5	1	High	Low – High (for 5 year update)	Yes	Yes	No	High
CH-6	3	High	High	Yes	Yes	No	Medium
CH-7	3	Medium	Low	Yes	Yes	No	High
CH-8	3	Medium	Low	Yes	Yes	No	High
CH-9	2	Medium	Low	Yes	Yes	No	High
CH-10	7	Medium	Low	Yes	Yes	Yes	Medium
CH-11	3	Medium	Medium	Yes	Yes	Yes	Medium
CH-12	2	Medium	Medium	Yes	Yes	Yes	Medium
CH-13	3	Medium	Low	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.8.8.1 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.

9.8.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.8.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Chesterfield 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 Chesterfield has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.8-1: Chesterfield Flood Exposure Map

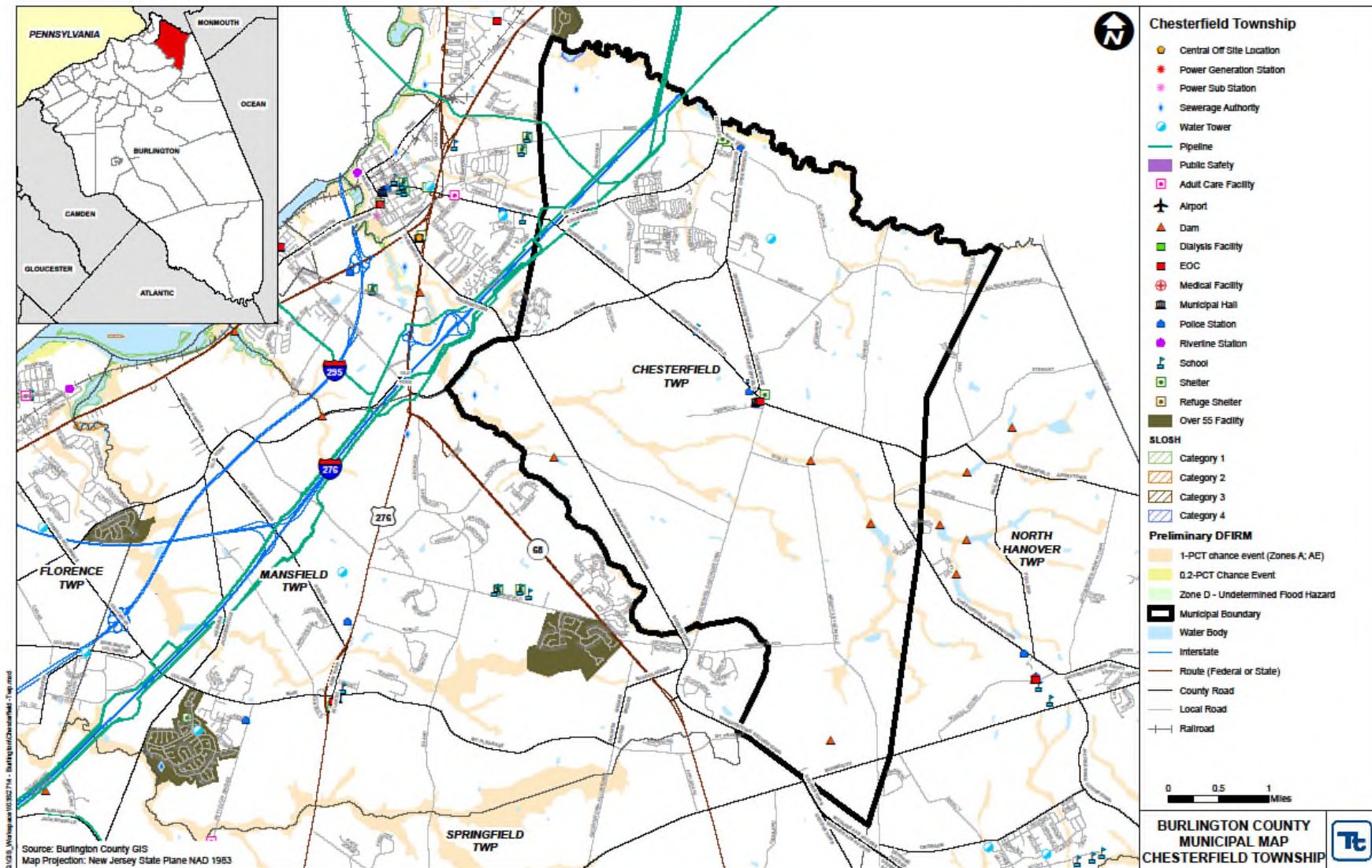
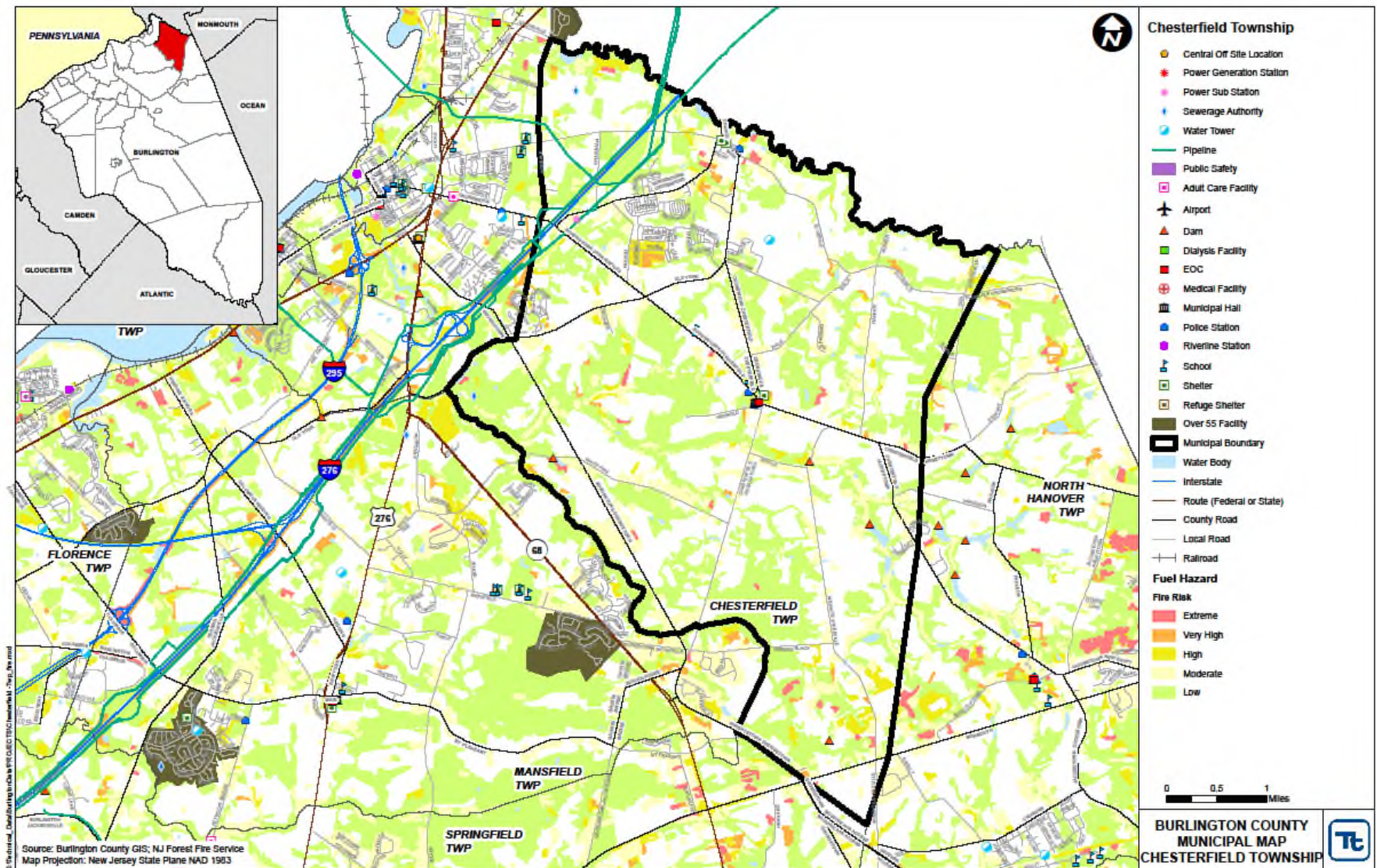


Figure 9.8-2: Chesterfield Wildfire Fuel Exposure



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

It is the intention of the Township of Chesterfield is 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

9.8.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.9 Township of Cinnaminson

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

9.9.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Danny Norman Title: Director of Emergency Management Address: 1621 Riverton Road, Cinnaminson, NJ 08077 Phone Number: (856) 296-6302 Fax Number: (856) 829-0284 E-mail Address: oem@cinnaminsonnj.org	Name: Frederick Turek Title: Cinnaminson Twp. Engineer/ Superintendent of PW Address: 1621 Riverton Road, Cinnaminson, NJ 08077 Phone Number: (856) 829-6703 Fax Number: (856) 786-9604 E-mail Address: fturek@cinnaminsonnj.org

9.9.2 PROFILE

9.9.2.1 Population

The population of the Township of Cinnaminson is estimated to be 15,569, based on information gathered during the 2010 U.S. Census.

9.9.2.2 Location

Cinnaminson Township covers nearly 8 square miles and is located on the north-western tip of Burlington County. The Township is bordered by the Delaware River to the northeast, and the Burlington Municipalities of Riverton and Palmyra to the northwest, Maple Shade to the southwest, Moorestown to the south Delran to the East. To the west, Cinnaminson is bordered by the Camden municipality of Pennsauken.

9.9.2.3 Brief History

The Township name of Cinnaminson originally comes from the Lenni-Lenape Tribe. The Lenni-Lenape Tribe came to the Cinnaminson area from somewhere west of the Mississippi. Lenni-Lenape means "original people" which to Cinnaminson they were. They named their hunting grounds Cinnaminson, which meant Sweetwater. One ancient spelling of Cinnaminson was Senamensing; this name belonging traditionally to a trail from the Delaware River through Moorestown and Mount Laurel to the seashore.

Cinnaminson, the Township, was created by an act of the Senate and General Assembly of the State of New Jersey, approved March 15, 1860.¹

9.9.2.4 Governing Body Format

The Township of Cinnaminson is governed by the township form of New Jersey Municipal Government. Under this form, the township committee remains the backbone of the municipality's government. Voters elect, at-large,¹ the township committee comprising three members. The elections are partisan and the committee members serve staggered three-year terms. The township committee elects the mayor for a

¹ <http://www.cinnaminsonnj.org/ourhistory.htm>

one-year term. The mayor serves as chair of the township committee and has powers vested in the mayor's office by general law.

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

9.9.2.5 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 Cinnaminson Township. Refer to the map in section 9.9.10) 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
Cinnaminson Harbour	Residential	911 Units	Harbour Dr. and River Road	Multiple Blocks and Lots	Zone X	Townhomes and 405 apartments in 14 buildings

9.9.3 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	Sustained slight damage
Fire	FM-2695	Yes	May 15-19, 2007	None

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
Winter Storm	DR-1873	Yes	December 19-2009	Electric lines down
Winter Storm	DR-1889	Yes	February 5-6, 2010	Electric lines down
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Sustained slight damage
Winter Storm	DR-1954	Yes	December 26-27, 2010	Cleared and sanded roads
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	Cinnaminson sustained damage during Irene, flooding and power outages throughout the township
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Sustained some damage during Sandy flooding and 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.

9.9.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$51,788,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$3,406,602 500-Year MRP: \$12,127,904 Annualized Loss: \$179,386	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$14,167,120 5% of GBS: \$70,835,600	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$542,462,000	Frequent	24	Medium
Drought	Not available	Occasional	14	Medium
Earthquake	500-Year MRP: \$855,855 2,500-Year MRP: \$20,698,192 Annualized Loss: \$18,882	Rare	6	Low
Landslides	Not available	Occasional	28	Medium

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.

9.9.5 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 Cinnaminson indicated that the municipality has minimum planning, regulatory, administrative, technical, community resiliency and community political capability, and a limited fiscal capability; and a commensurate political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.9.5.1 Legal and Regulatory Capability

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

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	1/27/1977		Chapter 220	Construction	+	-	
2) Zoning Ordinance	X	1/24/1980		Chapter 525	Zoning Office	+	-	
3) Subdivision Ordinance	X	9/17/2012		Chapter 330	Twp Engineer	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	4/8/1987		Chapter 290	Construction	+	-	
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	9/21/2005		Chapter 446	Various Dept.	+	-	
8) Comprehensive Plan / Master Plan/ General Plan			X					
9) Capital Improvements Plan	x	2013		Budget	Cinnaminson	+	-	
10) Site Plan Review Requirements	X	9/17/2012		Chapter 330	Construction	+	+	
11) Open Space Plan	X	3/16/2005		Chapter 71	Open space committee	+	-	
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development 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					
15) Comprehensive Emergency Management Plan	x	2013		EOP	COEM	+	+	
16) Emergency Response Plan	x	2013		EOP	COEM	+	+	
17) Post Disaster Recovery Plan	x	2013		EOP	C-LEPC	+	+	
18) Post Disaster Recovery Ordinance	x	2013		EOP	C-LEPC	+	+	
19) Real Estate Disclosure Requirement	N/A							
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.9.5.2 Administrative and Technical Capability

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

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/Construction Official/Contracted Engineer Firm
3) Planners or engineers with an understanding of natural hazards	Y	
4) NFIP Floodplain Administrator	Y	Construction Official
5) Surveyor(s)	Y	Contracted as needed
6) Personnel skilled or trained in GIS applications	Y	County GIS Department
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Director of Emergency Management
9) Grant Writer(s)	Y	Contracted as needed
10) Staff with expertise or training in benefit/cost analysis	N	

9.9.5.3 Fiscal Capability

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

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	No
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	Don't Know
5) Impact fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Don't Know
7) Incur debt through special tax bonds	Don't Know
8) Incur debt through private activity bonds	Don't Know
9) Withhold public expenditures in hazard-prone areas	Yes
10) State mitigation grant programs	Yes

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
11) Other	

9.9.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	
Public Protection	N/A	
Storm Ready	YES	2011
Firewise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Cinnaminson'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/>

9.9.6 MITIGATION STRATEGY

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

9.9.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.9.7. 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: • US Rt. 130 • Cinnaminson Ave. • Riverton Rd. • River Rd.	X				X	These are state and county roads
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood proof these properties. • Fairfax Dr. • Pennsuaken St. • S. Randolph Ave.	X					These projects are important and need to be continued. Funding, budget and personnel issues continue to be issues.

9.9.6.2 Hazard Vulnerabilities Identified

Officials of Cinnaminson noted specific areas that are prone to the flooding hazard. These areas include Riverside Drive, Canal Street, areas around Steels Pond, and Calhoun & Adams Streets.

In the Township of Cinnaminson, an estimated 539 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 \$112,410,000 (4.7%) 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 Cinnaminson has a total of 261 NFIP policies, 120 of which are located within the 1% annual chance flood area. FEMA has identified 8 Repetitive Loss (RL) property, including 1 Severe Repetitive Loss (SRL) property 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)
Cinnaminson (T)	261	91	\$945,575	8	1	120	160	101

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.

9.9.7 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
CN-1	Flood control and dredging. Install headwall(s), sluice gates, and potential pump station to mitigate severe flooding of Riverside Drive.	Yes	Flood	2-1	Lead: Twp. Engineer Support: USACE, DPW, NJOEM, NJDEP	High	High (~\$600K)	FEMA HMA grants	Short DOF	High	SP
CN-2	Establish flood control and pump station on Canal Street.	Yes	Flood	1-5 2-1	Lead: DPW Support: NJDPW, NJOEM, FEMA, NJDEP	Medium	High (>\$100K)	FEMA HMA grants	Long DOF	Medium	SP
CN-3	Dredging and dam restoration at Steels Pond at Lenola and Church Roads. Install fore bay structure.	Yes	Flood	2-1	Lead: DPW Support: DPW, NJOEM, NJDEP, FEMA	Medium	High (~\$600K)	FEMA HMA grants	Long DOF	Medium	NR
CN-4	Removal of siltation and debris from stormwater collection system at Calhoun & Adams Streets.	Yes	Flood	2-1	Lead: DPW Support: DPW, NJDEP, NJOEM	Medium	Medium (\$10K-\$100K)	Municipal and State funding	Short DOF	Low	PR
CN-5	Establishing an emergency operation center to provide joint communication with all township departments during a incident	N/A	Natural Hazards	1-2 3-2	Lead: DPW NJOEM FEMA	High	Medium (\$10K-\$100K)	HMGP PDM	Long DOF	High	SP
CN-6	Upgrade and properly install emergency power generator at our local reception center that provide critical support the county shelters.	Yes	Severe weather outages	1-2 3-2	Lead: DPW NJOEM, FEMA, Schools, and Emergency services	High	Medium (\$10K-\$100K)	HMGP PDM	Short DOF	High	SP
CN-7	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1	Twp. Committee; Planning	Medium	Low	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
				5-1							
CN-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
CN-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	Medium	ES PR
CN-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	Medium	ES
CN-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
CN-12	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
CN-13	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
CN-14	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
CN-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	Medium	Low	Municipal Budget	Short	H	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
CN-16	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
CN-17	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
DOF	Depending on funding
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	Burlington 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 (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.

9.9.8 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)
CN-1	1	High	High	Yes	Yes	Yes	High
CN -2	2	Medium	High	Yes	Yes	No	Medium
CN -3	1	Medium	High	Yes	Yes	No	Medium
CN -4	1	Medium	Medium	Yes	Yes	Yes	Low
CN -5	2	High	High	Yes	Yes	No	High
CN -6	2	High	High	Yes	Yes	No	High
CN-7	7	Medium	Low	Yes	Yes	Yes	Medium
CN-8	3	Medium	Medium	Yes	Yes	No	High
CN-9	1	Medium	Medium	Yes	Yes	Yes	Medium
CN-10	3	Medium	Medium	Yes	Yes	Yes	Medium
CN-11	1	Medium	Low	Yes	Yes	Yes	High
CN-12	1	High	Low – High	Yes	Yes	No	High
CN-13	2	Medium	Medium	Yes	Yes	Yes	Medium
CN-14	3	Medium	Low	Yes	Yes	Yes	Medium
CN-15	3	Medium	Low	Yes	Yes	Yes	High
CN-16	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
CN-17	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.9.8.1 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.

9.9.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.9.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Cinnaminson 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 Cinnaminson has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.9-1: Cinnaminson Flood Exposure Map

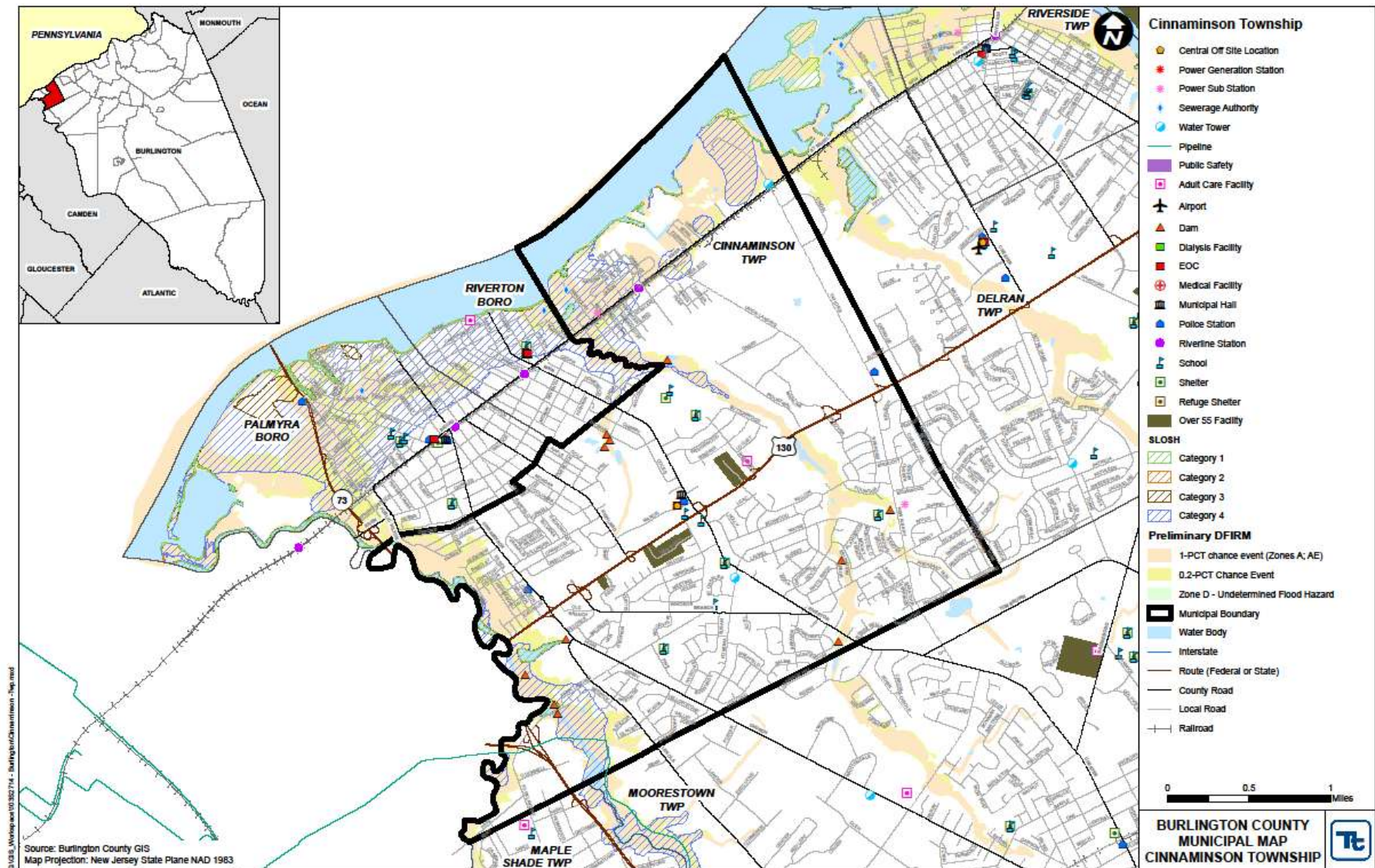
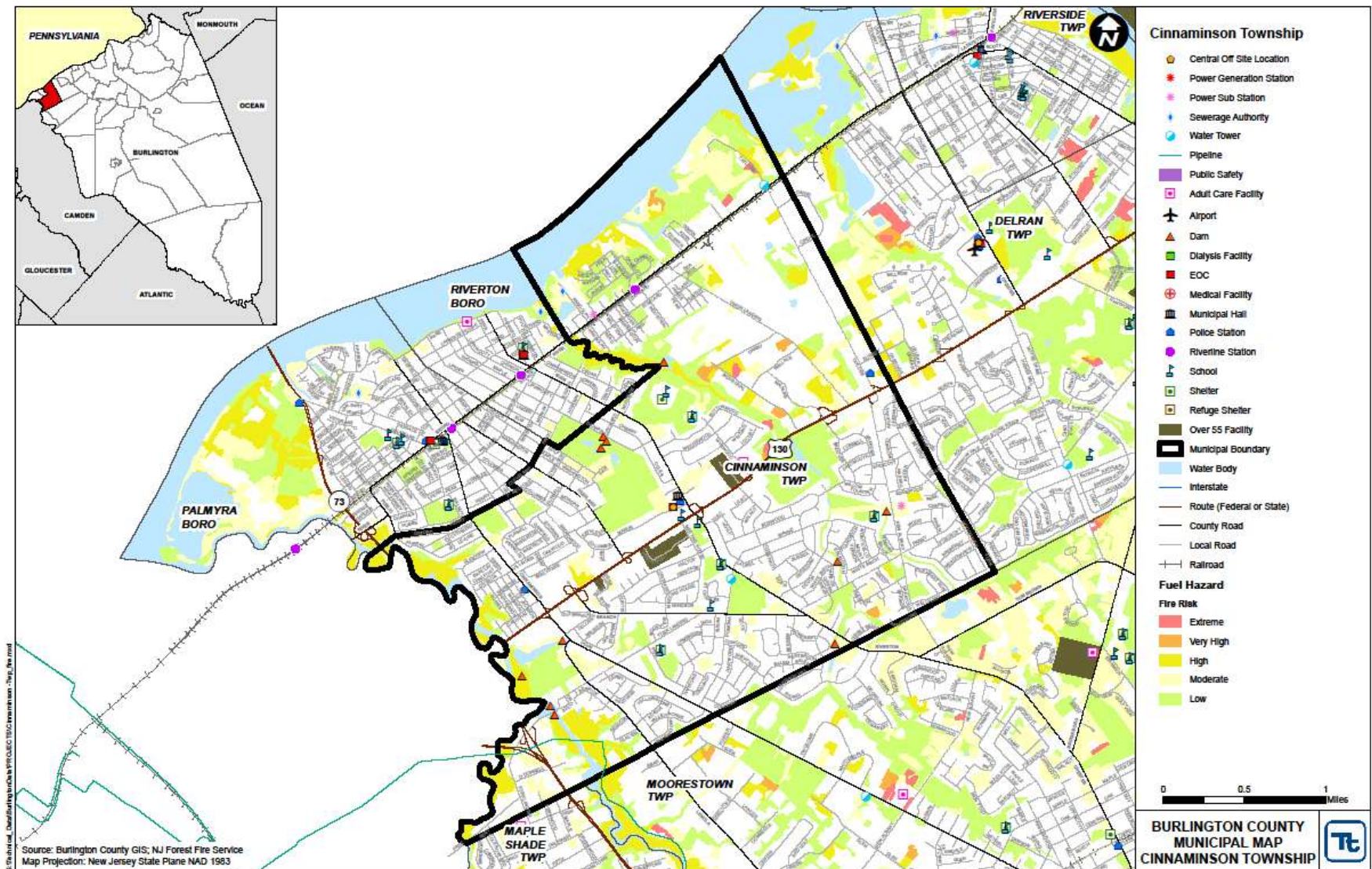


Figure 9.9-2: Cinnaminson Wildfire Fuel Exposure



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

It is the intention of the Township of Cinnaminson to incorporate mitigation planning as an integral component of daily municipal operations. The Township currently includes mitigation planning within the Township Master Plan. The following table contains an additional 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
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	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

9.9.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.10 Township of Delanco

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

9.10.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Alternate Point of Contact	Primary Point of Contact
Name: Christopher Noll Title: Township Engineer/NFIP Administrator Address: 525 Fellowship Rd. Suite 300 Mt. Laurel, NJ 08054 Phone Number: (856) 235-7170 Fax Number: 856-273-9239 E-mail Address: cnoll@erinj.com	Name: Janice Lohr Title: Assistant Administrator/Municipal Clerk Address: 770 Coopertown Rd. Delanco NJ 08075 Phone Number: (856) 461-0561 Ext. 224 Fax Number: 856-461-0685 E-mail Address: jlohr@delancotownship.com

9.10.2 PROFILE

9.10.2.1 Population

The population of the Township of Delanco is estimated to be 4,283, based on information gathered during the 2010 U.S. Census.

9.10.2.2 Location

Delanco is located in northern Burlington County and is bordered by Beverly City and Edgewater Park to the east, Willingboro to the south, Delran to the south-west and Riverside to the west. The Township borders Pennsylvania to the north.

The Township encompasses approximately 3.2 miles and naturally bordered by both the Delaware River and Rancocas Creek. Delanco touches Route 130 and is less than a 15 minute drive to Interstate 295 and the New Jersey Turnpike.¹

9.10.2.3 Brief History

Delanco was originally the hunting grounds of the Lenni-Lenape Tribe and named for the geographical junction of the Township at the Delaware River and Rancocas Rivers. The historical beginning of Delanco dates to 1848 when landowner Abraham Perkins deeded parts of his land to the Delanco Land Company. After this deal, farmhouses and buildings began springing up around the area.

Major growth around the area began after 1852 and the first wagon and passenger bridge was built across the Rancocas in 1870, making a direct connection to Riverside. A trolley and vehicle bridge was erected in 1901, allowing more traffic to flow into the Township. Finally, in 1934, a concrete bridge was built to accommodate the increasing volume of people to and from the area now known as Delanco.

On March 1, 1859, the New Jersey Legislature approved the division of Willingboro Township, from which was formed Beverly Township. Delanco, in turn, was at that time part of Beverly Township and remained so until June 1924 when the state legislature passed an act creating Delanco Township as a separate entity with the right to wholly govern itself.²

¹ <http://www.delancotownship.com/content/77/default.aspx>

² <http://www.delancotownship.com/filestorage/77/49/part1.pdf>

9.10.2.4 Governing Body Format

The Township Committee is the township's governing body. This elective body is responsible for formulating policies, approving the annual budget and enacting ordinances and resolutions to provide a legislative framework. Beginning in 2002 the Township Committee increased to a five-member committee. This increase in the committee was approved by the voters in the 2000 General Election. The Township Committee consists of a mayor, deputy mayor and three committee members.³

9.10.2.5 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 9.10.10) 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 Structur es	Address	Block and Lot	Known Hazard Zone	Description /Status
Newton's Landing	Res	13	Coopertown Rd			Approved
The Crossings at Delanco Station	Res	161	Coopertown Rd			Approved

³ <http://www.delancotownship.com/content/213/484/default.aspx>

9.10.3 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	Closed roads and power outages.\$18,000
Winter Storm	DR-1889	Yes	February 5-6, 2010	Closed roads and power outages\$24,000
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26- 27, 2010	Closed roads and power outages\$10,500
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26- September 5, 2011	Flooding, high winds, debris.\$18,000
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	Flooding, high winds, debris. \$202,000

9.10.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$7,235,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$669,730 500-Year MRP: \$2,346,132 Annualized Loss: \$37,068	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$2,823,620 5% of GBS: \$14,118,100	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$155,850,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$177,698 2,500-Year MRP: \$4,299,559 Annualized Loss: \$3,937	Rare	6	Medium
Landslides	Not available	Occasional	36	High

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.

9.10.5 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 Delanco indicated that the municipality has moderate 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.

9.10.5.1 Legal and Regulatory Capability

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

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 Develop- ment					
1) Building Code	x			International Building Code	Construction Code Official	+	+	
2) Zoning Ordinance	x			Chapter 110	Zoning Officer/Land Use Board	0	+	
3) Subdivision Ordinance	x	1979		Chapter 100	Land Use Board (LUB)	0	+	
4) NFIP Flood Damage Prevention Ordinance	x	1987		Chapter 65	Township Committee/To wnship Engineer	0	+	
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	N/A							
6) Floodplain Management / Basin Plan	x	2006		Chapter 65	Township Committee/ Township Engineer	0	+	
7) Stormwater Management Plan/Ordinance	x	2006		Chapter 249	Township Engineer and/or other Municipal Officials	0	+	
8) Comprehensive Plan / Master Plan/ General Plan	x	2003			UCC	0		

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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 Develop- ment					
9) Capital Improvements Plan	x	annual			LUB	+		
10) Site Plan Review Requirements	x	2011			LUB	+		
11) Open Space Plan	x			Ch 65 Twp. Committee		0		
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan								None
15) Comprehensive Emergency Management Plan	x	2011		Emergency Management Plan	Office of Emergency Management	+	+	
16) Emergency Response Plan	x	2011		Emergency Management Plan	Office of Emergency Management	+	+	
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							

9.10.5.2 Administrative and Technical Capability

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

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 Environmental Resolutions, Inc.
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	y	Township Engineer Environmental Resolutions, Inc.
3) Planners or engineers with an understanding of natural hazards	y	Township Engineer Environmental Resolutions, Inc.
4) NFIP Floodplain Administrator	y	Christopher Noll, Township Engineer Environmental Resolutions, Inc.
5) Surveyor(s)	y	Township Engineer Environmental Resolutions, Inc.
6) Personnel skilled or trained in GIS applications	y	Township Engineer Environmental Resolutions, Inc.
7) Scientist familiar with natural hazards	y	Township Engineer Environmental Resolutions, Inc.
8) Emergency Manager	y	Municipal OEM
9) Grant Writer(s)	y	Township Engineer Environmental Resolutions, Inc.
10) Staff with expertise or training in benefit/cost analysis	y	Township Engineer Environmental Resolutions, Inc.

9.10.5.3 Fiscal Capability

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

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	

9.10.5.4 Community Classifications

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

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 Delanco'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/>

9.10.6 MITIGATION STRATEGY

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

9.10.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.10.7. 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
	Discontinued	Completed	Continuous	In Progress / Not Yet Complete	No Progress / Unknown	
Mitigation for roads that provide key Emergency Services Access			X		X	Stormwater management study planned. However, not started due to budget restraints
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood proof these properties			X		X	No progress due to budget and personnel restraints.

9.10.6.2 Hazard Vulnerabilities Identified

In the Township of Delanco, an estimated 191 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 38% is located within the 1% annual chance flood area. A total of \$5,474,000 (1.1%) 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 Delanco has a total of 84 NFIP policies, 23 of which are located within the 1% annual chance flood area. FEMA has identified 0 Repetitive Loss (RL) property, including 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)
Delanco (T)	84	9	\$67,299	0	0	23	55	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⁾
-	-	-	-	-	-	-	-

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.

9.10.7 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
DCO-1	Bogg's Run - implement improvements to increase the capacity of culverts at the Light Rail Line and Burlington Avenue	Existing	Flood	1-1	Lead: Delanco OEM, Edgewater OEM Support: County OEM, NJ Transit	High	High	Municipal Budget, HMA programs with local or county match	Long	Medium	NR
DCO-2	Perform seawall repairs on Delaware Riverfront	Existing	Flood	1-1 3-1	Township Committee	High	High	Municipal Budget, federal, state programs with local or county match	Medium	Medium	SP
DCO-3	Perform drainage improvements at Hickory St.	Existing	Flood	1-1 2-1	Township Committee	High	High	Municipal Budget, HMA programs with local or county match	Medium	High	SP
DCO-4	Purchase new OEM phone system	N/A	Flood, Storms, All Emergency Situations	1-1	Township Committee	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short	Medium	SP
DCO-5	Establish Street Tree inspection program and implement removal of dangerous trees	N/A	Flood, Storms, All Emergency Situations	1-5 4-1	Township Committee	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short	Medium	SP

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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
DCO-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	Twp./Public	OG	Medium	PR
DCO-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
DCO-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	Medium	ES PR
DCO-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	Medium	ES
DCO-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
DCO-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
DCO-12	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

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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
DCO-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
DCO-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	H	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.

9.10.8 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)
DCO-1	1	High	High	Yes	Yes	No	Med
DCO-2	2	High	High	Yes	Yes	No	Med
DCO-3	2	High	High	Yes	Yes	Yes	High
DCO-4	1	Medium	Medium	Yes	Yes	No	Med
DCO-5	2	Medium	Medium	Yes	Yes	No	Med
DCO-6	7	Medium	Low	Yes	Yes	Yes	Medium
DCO-7	3	Medium	Medium	Yes	Yes	No	High
DCO-8	1	Medium	Medium	Yes	Yes	Yes	Medium
DCO-9	3	Medium	Medium	Yes	Yes	Yes	Medium
DCO-10	1	Medium	Low	Yes	Yes	Yes	High
DCO-11	1	High	Low – High	Yes	Yes	No	High
DCO-12	2	Medium	Medium	Yes	Yes	Yes	Medium
DCO-13	3	Medium	Low	Yes	Yes	Yes	Medium
DCO-14	3	Medium	Low	Yes	Yes	Yes	High

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.10.8.1 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.

9.10.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.10.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Delanco 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 Delanco has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.10-1: Delanco Flood Exposure Map

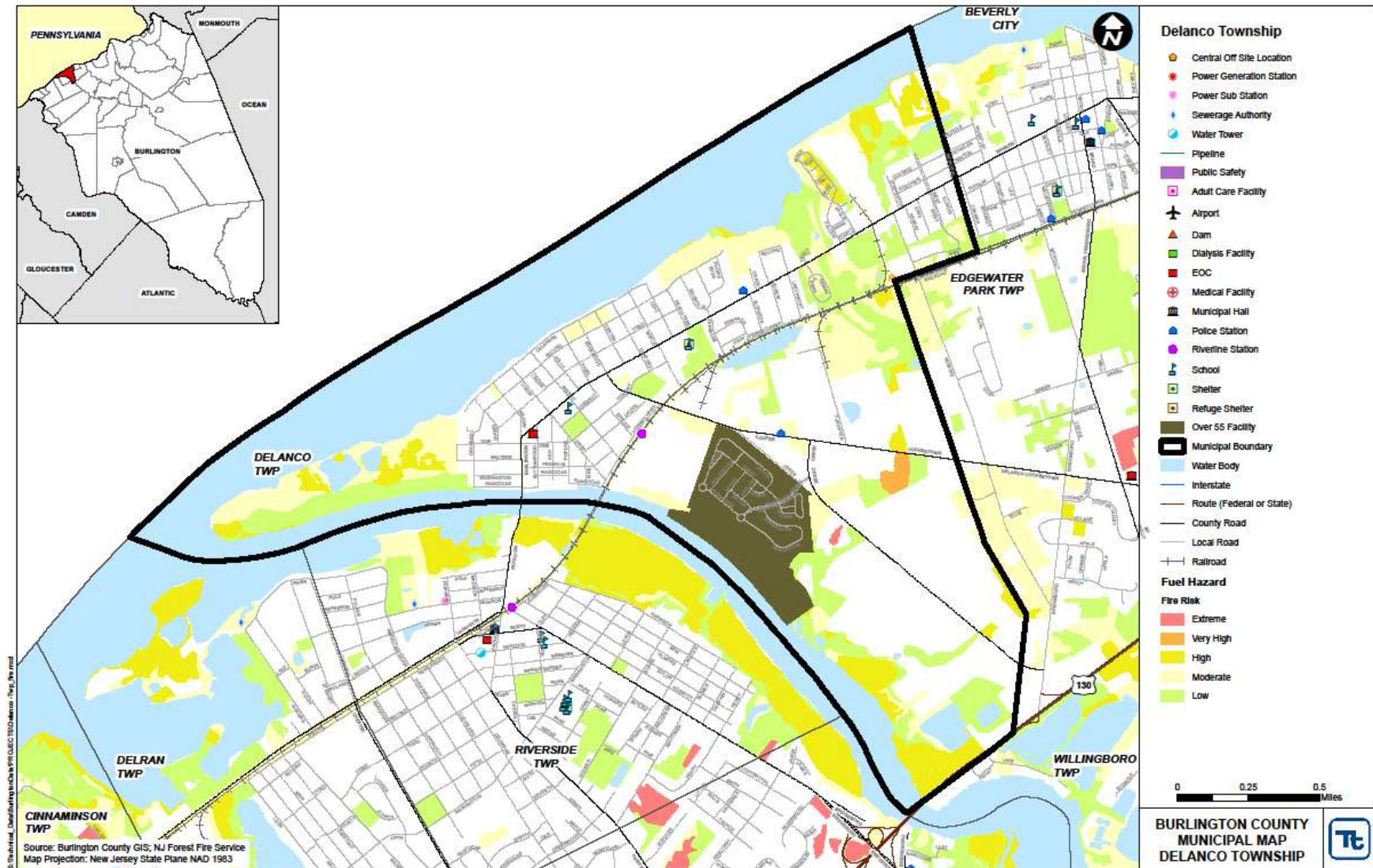
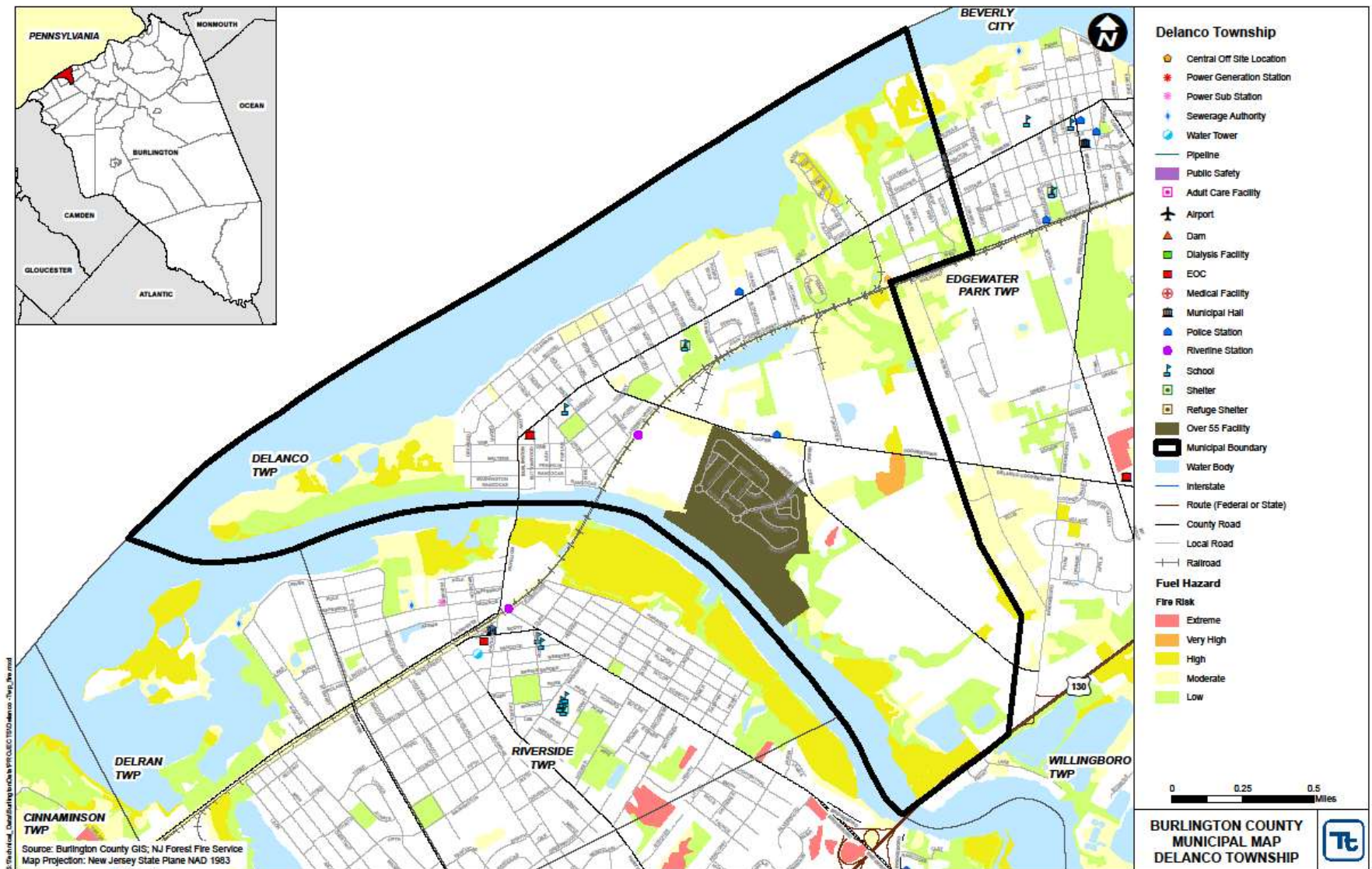


Figure 9.10-2: Delanco Wildfire Fuel Exposure



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

It is the intention of the Township of Delanco 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
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
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
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

9.10.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.11 Township of Delran

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

9.11.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Walter Bauer Title: Emergency Manager Address: 900 Chester Ave., Delran NJ 08075 Phone Number: (609) 352-4633 Fax Number: (856) 461 9005 E-mail Address: walter.bauer@delranfire.org	Name: Jeff Hatcher Title: Township Administrator Address: 900 Chester Ave. Delran, NJ 08075 Phone Number: (856) 461-7734 Ext. 113 Fax Number: (856) 764-7364 E-mail Address: jhatcher@delrantownship.org

9.11.2 PROFILE

9.11.2.1 Population

The population of the Township of Delran is estimated to be 16,896, based on information gathered during the 2010 U.S. Census.

9.11.2.2 Location

Delran is in the northern portion of Burlington County. Delran is approximately 7.2 square miles, and is bordered by Riverside and Delanco to the north-east, Moorestown to the south, Cinnaminson to the west, and Willingboro to the east. The Township is also bordered by the Delaware River to the north. Route 130 runs through Delran, and serves as the Township's principle artery.

9.11.2.3 Brief History

For 168 years, the Township of Delran was part of Chester Township, and in numerous early Chester records, the names of the Delran section's residents appear. The long Chester Township period was principally one of an agrarian way of life, but it was marked by several new influences as the years went by.

The decade of the 1870s proved to be a time of change as well as growth in Burlington County. One potent factor was the Centennial observance of 1876 in Philadelphia, which drew thousands of visitors. Some visitors came to stay, and numerous Philadelphians moved to New Jersey. One result of the influx of new residents and ideas was the demand for partitioning. Everyone wanted a voice in the building of new schools and roads, and in the day of horse drawn vehicles, it was not easy to attend township meetings. Consequently, an Act made its way through the New Jersey Legislature in 1880 that partitioned Chester Township in numerous self-governing municipalities, including the newly formed Township of Delran.¹

¹ http://www.delrantownship.org/history_of_delran

9.11.2.4 Governing Body Format

Delran is organized under the Optional Municipal Charter Law as a Mayor-Council form of government conducted every two years. The governing body consists of five members with three elected to represent their wards. The terms are four-year staggered terms. The Mayor and the remaining two members of the governing body are elected at large for four-year terms. Daily operations are entrusted to the Business Administrator, appointed by the Mayor with advice and consent of Council.²

9.11.2.5 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 of Delran. Refer to the map in section 9.10.10) 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
Home Depot	Commercial	2	1825 Rt. 130	65/18.01	No	Undeveloped
Willowbrook Country Club	Residential	50	4310 Bridgeboro Moorestown Road	116 / 8 10.01 24	Swedes Run Creek watershed	Plans not submitted
Stellwag Farm	Residential	15	116 Hartford Road	116 / 23	None	Plans to be submitted in 2013

9.11.3 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	DR-1694	Yes	April 14-20, 2007	Roads were closed in the Riverside Park Neighborhood. The Fire Department responded to numerous calls for assistance pumping out basements. Nearly \$42K in Public Assistance was requested for time and equipment for pumping

² http://www.delrantownship.org/elected_officials

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Nor'Easter)				out residential basements.
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-20, 2009	Roads were closed throughout the Township. Approximately \$60 K in Public Assistance was requested for the Fire Department responding to snow related incidents and Public Works for snow removal.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Roads were closed throughout the Township. Approximately \$90K in Public Assistance was requested for the Fire Department responding to snow related incidents and Public Works for snow removal.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	Roads were closed throughout the Township. Approximately \$49K in Public Assistance was requested for the Fire Department responding to snow related incidents and Public Works for snow removal.
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	Roads were closed throughout the Township. \$13.6K in Public Assistance was requested for the Fire Department responding to storm related incidents (downed wires/trees, pump out basements) and Public Works for the removal of downed trees.
Nor'Easter	N/A	No	April 2012	Roads closed in Riverside Park Neighborhood. The Fire Department responded to numerous calls for assistance to pump out basements. Public Assistance was requested for time and equipment for pumping out residential basements.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Roads were closed throughout the Township. \$13.6K in Public Assistance was requested for the Fire Department responding to storm related incidents (downed wires/trees, pump out basements) and Public Works for the removal of downed trees.

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.



9.11.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$35,726,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$3,304,645 500-Year MRP: \$12,834,451 Annualized Loss: \$175,012	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$12,959,520 5% of GBS: \$64,797,600	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$831,221,000	Frequent	24	Medium
Drought	Not available	Occasional	14	Medium
Earthquake	500-Year MRP: \$776,712 2,500-Year MRP: \$18,627,724 Annualized Loss: \$16,915	Rare	6	Low
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.

9.11.5 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 Delran indicated that the municipality has high planning, regulatory, administrative, community political and technical capabilities and moderate community resiliency and fiscal capability; with a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.11.5.1 Legal and Regulatory Capability

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

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	9/7/201		State Law	Community Development	+	+	
2) Zoning Ordinance	Y	7/1/2005	Y	Township Code Chapter 335	Community Development / Building Inspector	+	+	In 2004 Delran reviewed and updated all Ordinances and are updated as needed
3) Subdivision Ordinance	Y	7/1/2005		Township Code Chapter 335	Community Development / building Inspector	+	+	In 2004 Delran reviewed and updated all Ordinances and are updated as needed
4) NFIP Flood Damage Prevention Ordinance	Y	Ordinance 1995-27 7/1/2005		Ordinance 1995-27 Chapter 167	Community Development / Building Inspector	+	+	In 2004 Delran reviewed and updated all Ordinances and are updated as needed
4a) Cumulative Substantial Damages	Y	7/1/2005			Community Development / building Inspector	+	+	In 2004 Delran reviewed and updated all Ordinances and are updated as needed
4b) Freeboard	Y	7/1/2005		I.C.C./N.J. Section 1612	Community Development / Building Inspector	+	+	In 2004 Delran reviewed and updated all Ordinances and are updated as needed

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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					
5) Growth Management	Y	7/1/2005		Township Code Chapter 335	Community Development / Building Inspector	+	+	Part of the Zoning Plan
6) Floodplain Management / Basin Plan	Y	7/1/2005		Township Code Chapter 167	Community Development / Building Inspector	+	+	"In 2006 Delran reviewed and updated all Ordinances and are updated as needed
7) Stormwater Management Plan/Ordinance	Y	7/1/2005		Township Code Chapter 303	Community Development / Building Inspector	+	+	"In 2006 Delran reviewed and updated all Ordinances and are updated as needed
8) Comprehensive Plan / Master Plan/ General Plan	Y	2008		Township Code Chapter 335	Planning Board	+	+	Reviewed every 5 years
9) Capital Improvements Plan	Y	March 2013		Yearly Twp. Budget	Town council	+	+	Reviewed yearly as part of the township budget
10) Site Plan Review Requirements	Y			Township Code Chapter 290	Community Development / Building Inspector	+	+	NJ Edition of the 2006 ICC Building Codes & Zoning Plan
11) Open Space Plan		Nov. 2011		Township Master Plan	Town Council	+	+	
12) Stream Corridor Management Plan	N							
13) Watershed Management or	N							

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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					
Protection Plan								
14) Economic Development Plan	N							
15) Comprehensive Emergency Management Plan	Y				OEM Coordinator	+	+	
16) Emergency Response Plan	Y				OEM Coordinator	+	+	
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)]								

9.11.5.2 Administrative and Technical Capability

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

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	Town Council / Township Engineer
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Town council / Township Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Town council / Township Engineer
4) NFIP Floodplain Administrator	Y	Community Development / Building Inspector
5) Surveyor(s)	Y	Town council / Township Engineer
6) Personnel skilled or trained in GIS applications	Y	Burlington County / GIS office
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Emergency Management / Coordinators
9) Grant Writer(s)	Y	Town Council / Township Engineer
10) Staff with expertise or training in benefit/cost analysis	N	

9.11.5.3 Fiscal Capability

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

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	

9.11.5.4 Community Classifications

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

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 Delran'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/>

9.11.6 MITIGATION STRATEGY

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

9.11.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.11.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

The Township has acquired flood prone properties in the Green Hills Development off of Dukes Parkway East.

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
Install DROP INLETS with PUMPS along River Road and redo the road to prevent flooding that occurs numerous times a year along the Delaware River.		X				Second phase of Riverside Park flood mitigation projects are underway.
Regrade the land in the area of Waterford Dr. to help eliminate water drainage problem and reduce flooding and property damage. In the 2007 Nor'easter the fire department spent several days pumping out basements in this area	X					Lack of funding and resources
Replace culvert on Westover Drive to reduce flooding of properties and basements.	X					Lack of funding and resources
Raise bank along River Road, replace storm water outflow at Stewart Ave. and redo the road to prevent flooding that occurs numerous times a year along the Delaware River.		X	X			Applied for grant and budgeted funds toward project

9.11.6.2 Hazard Vulnerabilities Identified

The Township has identified Riverside Park as an area of concern for flooding, particularly during Nor'easters and severe storms.

In the Township of Delran, an estimated 570 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 \$77,216,000 (3.6%) 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 Delran has a total of 137 NFIP policies, 64 of which are located within the 1% annual chance flood area. FEMA has identified 8 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)
Delran (T)	137	58	\$557,562	8	0	64	92	45

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	-	-	-	-	-	-	-

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.

9.11.7 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
DR-1	Purchase properties and convert to open space and/or increase first floor elevations and eliminating basements, where applicable at Riverside Park (River Dr., Stewart Ave., Alden Ave., and Norman Ave.)	Existing	Flood	2-1 2-2 3-1 4-1 4-2	Lead: Twp. Engineer Support: Twp. DPW, NJOEM, NJDEP	High	High	FEMA PDM, NJDEP Blue/Green Acres	DOF	High	PP
DR-2	Construct pump stations and rebuild the storm water management system to collect and remove storm water runoff at Riverside Park (River Dr., Stewart Ave., Alden Ave., and Norman Ave.)	New and or Existing Structures	Flood	1-1 2-1	Lead: Twp. Engineer Support: Twp. DPW, NJOEM, USACE, NJDEP	High	High (\$2M-3M)	FEMA PDM, USACE CAP	Long/DOF	High	SP
DR-3	Restoring and increase height of berm and stabilizing Rancocas Creek stream bank along River Dr.	New and or Existing Structures	Flood	1-1 3-1	Lead: Twp. Engineer Support: Twp. DPW, NJOEM, USACE, NJDEP	High	High	FEMA PDM, USACE CAP, NJDEP Coastal Engineering Shore Protection Program	Short/DOF	High	NR
DR-4	Reconstruct sewer outfall on River Dr. at Stewart Ave., including installation of a tide valve to prevent high tide waters from backing up storm water sewer system.	New and or Existing Structures	Flood	1-1 3-1	Lead: Twp. Engineer Support: Twp. DPW, NJDEP, Burlington County	High	Medium to High	FEMA PDM, Municipal Capital Budget, County CDBG	On-going	High	SP
DR-5	Stabilize stream embankments with steel sheeting or other acceptable method to	New and or Existing Structures	Coastal Erosion	3-1	Lead: Twp. Engineer Support: Twp. DPW	High	High	FEMA PDM, Private Homeowner	DOF	Medium	NR

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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
	mitigate against continued erosion of stream bank associated with a tributary to Swede's Run (Conrow Rd.) and Laurel Run Creek (Stoneham Dr.)										
DR-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	Twp./Public	OG	Medium	PR
DR-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
DR-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	Medium	ES PR
DR-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	Medium	ES
DR-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
DR-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
DR-12	Promote the participation of	N/A	Flood	1-4	Municipality with	Medium	Medium	Municipal	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
	Floodplain Administrator within the planning process and other activities.			4-2	support from County, NJOEM and FEMA			Budget			
DR-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
DR-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	H	PR
DR-15	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	Ongoing	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
OEM	Office of Emergency Management
Twp.	Township
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.

9.11.8 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)
DR-1	5	H	H	N	Y	N	H
DR-2	2	H	H	N	Y	N	H
DR-3	2	H	H	Y	Y	N	H
DR-4	2	H	H	Y	Y	N	H
DR-5	1	H	H	Y	Y	N	M
DR-6	7	M	L	Y	Y	Y	M
DR-7	3	M	M	Y	Y	N	H
DR-8	1	M	M	Y	Y	Y	M
DR-9	3	M	M	Y	Y	Y	M
DR-10	1	M	L	Y	Y	Y	H
DR-11	1	H	L-H	Y	Y	N	H
DR-12	2	M	M	Y	Y	Y	M
DR-13	3	M	L	Y	Y	Y	M
DR-14	3	M	L	Y	Y	Y	H
DR-15	2	M	L/M	Y	Y	Y	M

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.11.8.1 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.

9.11.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.11.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Delran 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 Delran has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.11-1: Delran Flood Exposure Map

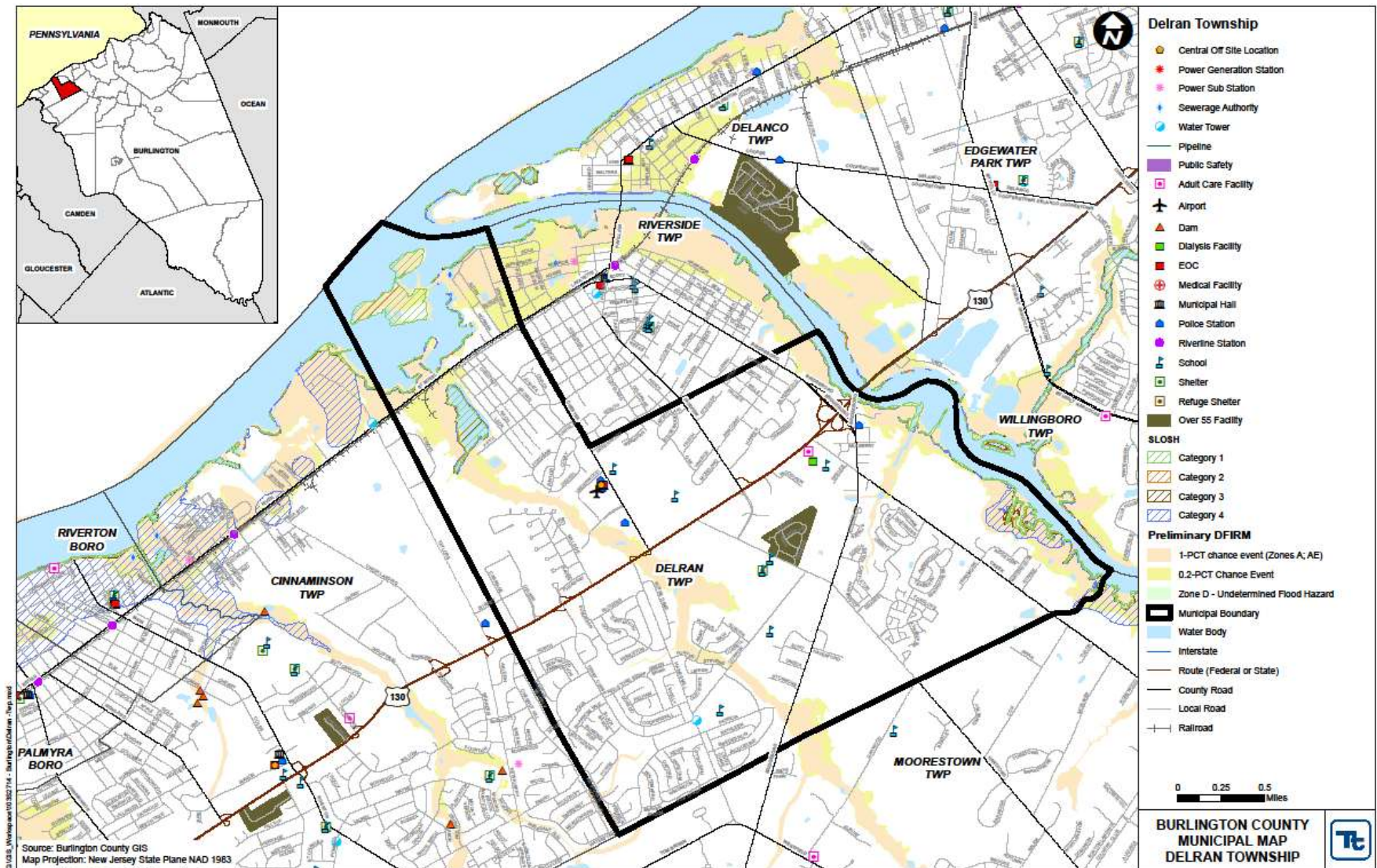
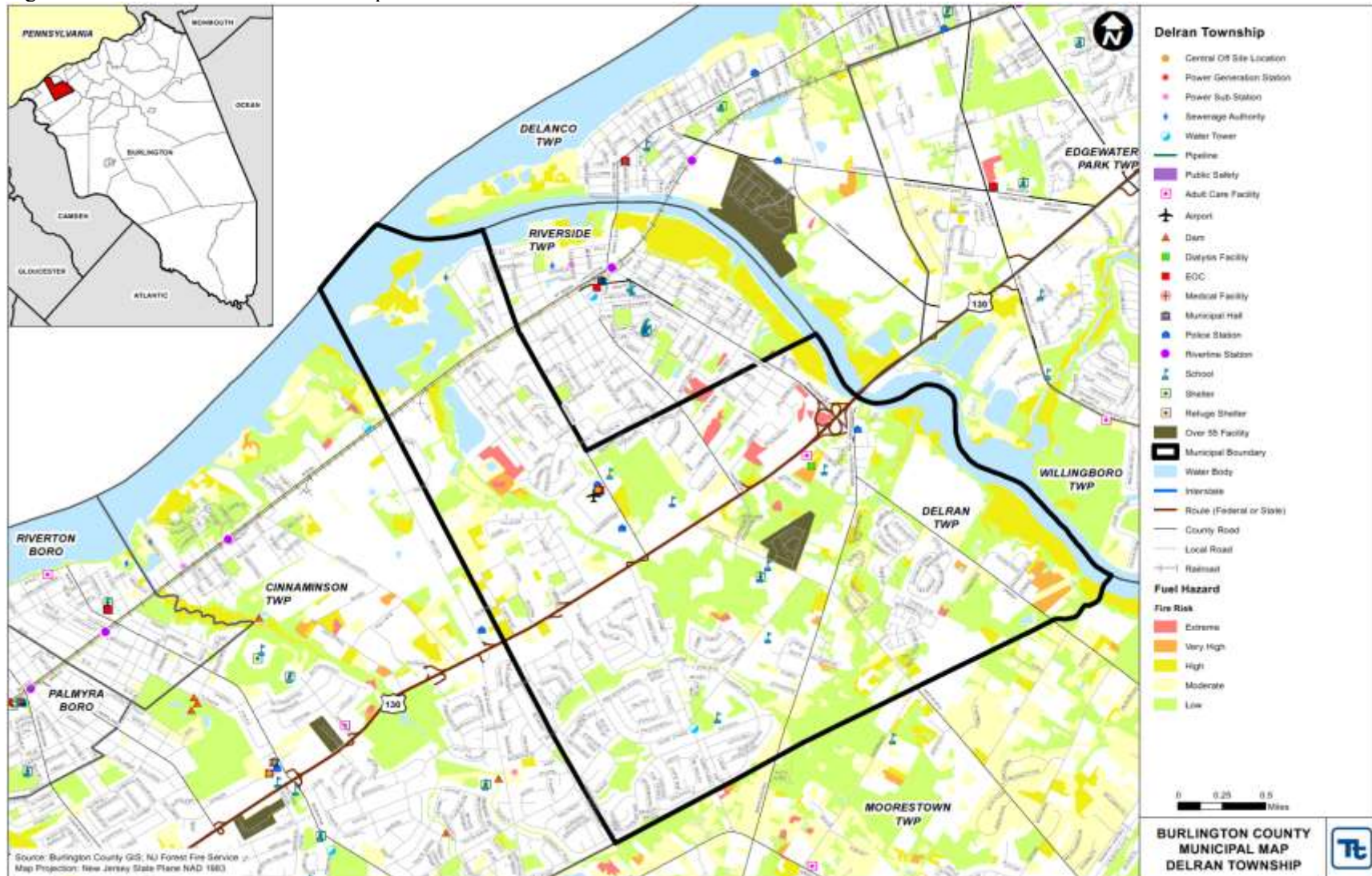


Figure 9.11-2: Delran Wildfire Fuel Exposure



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

It is the intention of the Township of Delran 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.	Y	Y
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.	Y	Y
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.	Y	Y
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.		Y
Grant Applications Data and maps will be used as supporting documentation in grant applications.	Y	Y
Municipal Ordinances When updating municipal ordinances, hazard mitigation will be a priority.	Y	Y
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.	Y	Y
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.	Y	Y
Day-to-Day Operations The municipality will incorporate hazard mitigation actions in daily operations and all projects.	Y	Y
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.	Y	Y
Municipal Budget Adopted annually, the municipality will look at mitigation actions when allocating funding.	Y	Y
Economic Development The local economic development group will take into account information regarding identified hazard areas when assisting new businesses in finding a location.	Y	Y

9.11.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.12 Township of Eastampton

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

9.12.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Thomas Czerniecki Title: Township Manager Address: 12 Manor House Ct., Eastampton, NJ 08060 Phone Number: (609) 267-5723 Ext. 201 Fax Number: (609) 265-1714 E-mail Address: tczerniecki@eastampton.com	Name: Kim-Marie White Title: Township Clerk Address: 12 Manor House Ct., Eastampton, NJ 08060 Phone Number: (609) 267-5723 Ext. 209 Fax Number: (609) 265-1714 E-mail Address: kwhite@eastampton.com

9.12.2 PROFILE

9.12.2.1 Population

The population of the Township of Eastampton is estimated to be 6,069, based on information gathered during the 2010 U.S. Census.

9.12.2.2 Location

The Township of Eastampton is centrally located within the northern section of Burlington County. It is bordered by Westampton to the north-west Springfield to the east and north-east, Pemberton Township to the southeast, Southampton to the south and Lumberton and Mount Holly to the south-west and west, respectively.

9.12.2.3 Brief History

The local area that is presently known as Eastampton Township was first periodically inhabited by tribes of the Delaware Native Americans. This period was around 1683. The Native Americans called the area Alumhatta. During the period of colonization, the Indians were forced to move from the area which was the standard operating procedure during colonial conquest.

The first “official” owner of the property was Henry Stacy. This was as a result of surveys conducted at the time by Proprietors of the Province of West Jersey. After Mr. Stacy’s death in 1686, the original 500 acre tract was purchased by Sarah Parker. Ms. Parker was a widow and had five children, and they lived on the property for 44 years.

Mr. Jacob Parker, supposedly a descendent of the widow Parker, purchased 37 acres in order to build a dam on the Rancocas Creek, which then led to future industrial activity in the area. “Parker Mills” was operating in 1790. In 1816, Mr. Charles French purchased the property and continued to operate the Parkers Mills for the next 15 years.

After years of the expansion and development as a result of the mills, Hezekiah B. Smith redeveloped the area and by the late 1870’s “Smithville” was taking shape. The site now contained shops, factories, a foundry, school house, park and accommodations for 250 people. In 1878, Smith ran for public office and became Congressman Smith and was very active in getting the people in his area to petition the New

Jersey Legislature to create a new township. Shortly after that, On March 9, 1880 at the Township meeting; Eastampton was officially incorporated as a township in the state of New Jersey per Senate Bill #14.¹

9.12.2.4 Governing Body Format

The Eastampton Township Council consists of five members elected at large in partisan elections to staggered four-year terms of office. The Mayor and Deputy Mayor are selected each year by the Council from among its members.

9.12.2.5 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
Former Metvins Salvage Yard	Mixed Use 117 Apts, 5600 sf retail space	6	Woodlane Road	Block 900.01 Lots 12.05 & 12.06	No	Approved Redevelopment Agreement. No site plan approvals as of 9/1/13
Former Gregory's Department Store and adjoining properties	Retail 29,000 sf 240 Apts	30 +/-	1171 Woodlane Rd. Area	Block 300 Lots 2.02, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25	No	Township Approved Redevelopment Plan. No redevelopment agreement, approvals, etc as of 9/1/13

¹ <http://www.eastampton.com/content/77/default.aspx>

9.12.3 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	A neighborhood of approximately 50 cottage style homes along the banks of the Rancocas Creek was partially flooded with creek water entering perhaps a dozen of the structures. The gravel roads, which are privately owned, were washed out in areas making it a challenge to provide emergency public services.
Fire	FM-2695	Yes	May 15-19, 2007	N/A
Winter Storm	DR-1873	Yes	December 19-2009	Snow removal required hiring of private firms to utilize specialized equipment to make the private gravel roads accessible for emergency and public service vehicles.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Snow removal required hiring of private firms to utilize specialized equipment to make the private gravel roads accessible for emergency and public service vehicles.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	N/A
Winter Storm	DR-1954	Yes	December 26-27, 2010	Snow removal required hiring of private firms to utilize specialized equipment to make the private gravel roads accessible for emergency and public service vehicles.
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	A neighborhood of approximately 50 cottage style homes along the banks of the Rancocas Creek was partially flooded with creek water entering perhaps a dozen of the structures. The gravel roads, which are privately owned, were washed out in areas making it a challenge to provide public services.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Police and DPW headquarters was closed due to power outage and lack of a back-up power source and fuel pumps could not function. In the community, the immediate issue was resorting power in the Rancocas Creek area. The fallen trees knocked out power throughout the area. In some instances, residents left and discovered the power to their homes was out when they returned days later. This meant that the report of the outage was not filed with the utility in a timely manner. Township wide, there was an exponential increase in the volume of trees and limbs that needed removal. This placed a strain on DPW resources and diminished the quality of DPW services for a few months

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.

9.12.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$3,832,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,183,308 500-Year MRP: \$6,878,200 Annualized Loss: \$92,452	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$4,512,840 5% of GBS: \$22,564,200	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$364,038,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$252,644 2,500-Year MRP: \$5,909,106 Annualized Loss: \$5,303	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.

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

9.12.5.1 Legal and Regulatory Capability

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

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 Develo pment					
1) Building Code	X	Adopted 1978, last amended 2000		Chapter 205	Construction	+	+	Last amendment established requirement for sealed surveys before issuance of certificate of occupancy.
2) Zoning Ordinance	X	Adopted in 1978 updated dozens of times, last being 2012		Chapter 540	Township Council for Adoption Planning Board for Implementation	+	+	As a result of extensive open space and farmland preservation, focus of development is concentrated on redevelopment of town center area
3) Subdivision Ordinance	X	Adopted in 1977 and last amended in 2012		Chapter 460	Township Council for Adoption Planning Board for Implementation	+	+	
4) NFIP Flood Damage Prevention Ordinance	N/A							No such ordinance in place
4a) Cumulative Substantial Damages	N/A							No such ordinance in place
4b) Freeboard	N/A							
5) Growth Management	X							Obligated to follow State Planning Area Maps
6) Floodplain Management / Basin Plan	X							Obligated to follow NJDEP

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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 Develo pment					
								requirements
7) Stormwater Management Plan/Ordinance	X							Obligated to follow NJDEP requirements
8) Comprehensive Plan / Master Plan/ General Plan	X	Updated 2006			Township Council	+	+	
9) Capital Improvements Plan	X	2013		Annual Budget	Township Council	+	+	
10) Site Plan Review Requirements	X	Adopted in 1977 and last amended in 2012		Chapters 460 and 540 of the Township Code	Township Council Adoption Planning Board Implementation	+	+	
11) Open Space Plan	X	2000		Element of Master Plan	Township Council Adoption Planning Board Implementation	+	+	
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	X			N.J.A.C. 7:15, in conjunction with the Statewide WQM Plan, which together constitute the Continuing Planning Process conducted pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-	The Department of Environmental Protection (DEP) administers the Statewide Water Quality Management (WQM) Planning NJDEP			All these regulations are referenced during the site plan review process.

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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 Develo pment					
				1 <u>et seq.</u> , the Water Pollution Control Act, N.J.S.A. 58:10A-1 <u>et seq.</u> , and N.J.S.A. 13:1D-1 <u>et seq.</u> , and as required by Sections 303(e) and 208 of the Federal Clean Water Act (33 U.S.C. 1251 <u>et seq.</u>).				
14) Economic Development Plan	X	Ongoing			Economic Development Planning is provided through the Burlington County Bridge Commission, Dept. of Economic Development and Regional Planning			The Department has included the Township's designated area for future economic development (Route 206) in variety of regional economic studies that evaluate traffic enhancement and agriculturally related industries.
15) Comprehensive Emergency Management Plan	X	2012			Emergency Management Committee	+	+	
16) Emergency Response Plan	X	2012						Covered by Emergency Management Plan or Departmental Orders
17) Post Disaster Recovery Plan	X							County Plan

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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 Develo pment					
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							

9.12.5.2 Administrative and Technical Capability

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

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's Office
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Township Engineer's Office
3) Planners or engineers with an understanding of natural hazards	Y	Township Engineer's Office
4) NFIP Floodplain Administrator	Y	Construction Official
5) Surveyor(s)	Y	Township Engineer's Office
6) Personnel skilled or trained in GIS applications	Y	Township Engineer's Office
7) Scientist familiar with natural hazards	Y	Township Engineer's Office
8) Emergency Manager	Y	Emergency Management Coordinator
9) Grant Writer(s)	Y	Township Manager's Office
10) Staff with expertise or training in benefit/cost analysis	Y	Township Manager's Office

9.12.5.3 Fiscal Capability

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

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 on limited NJ statutory basis
4) User fees for water, sewer, gas or electric service	Handled regionally
5) Impact fees for homebuyers or developers of new development/homes	Not permitted for off-site improvements per State law.
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	No (Only with rare State approval)
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	Don't Know

9.12.5.4 Community Classifications

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

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	N/A	N/A
Storm Ready	N/A	N/A
Firewise	ISO Class 4	2003

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Eastampton'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/>

9.12.6 MITIGATION STRATEGY

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

9.12.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.12.7. 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	
Establishment of an emergency Phone Tree for affected areas			x			The Township does maintain a contact list of those residents that are most at risk. Further, we actively promote our e-mail system and Nexel Alert system.
Signage to be displayed during potential flood hazards					x	Flood hazards are focused on private roads, signage not a priority.
Establish written procedures for when plan is to be implemented			X			Addressed directly in the EMP.

9.12.6.2 Hazard Vulnerabilities Identified

In the Township of Eastampton, an estimated 36 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 \$15,276,000 (2.1%) 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 Eastampton has a total of 37 NFIP policies, 17 of which are located within the 1% annual chance flood area. FEMA has identified 2 Repetitive Loss (RL) property, including 1 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)
Eastampton (T)	37	83	\$715,586	2	1	17	21	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 = 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.

9.12.7 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
EA-1	GENERATORS - The police and public works facilities are co-located. The property does not have a back-up power generator. This can impact the ability to handle administrative activities, minor repair operations, and access to fuel pumps. The Township would like a generator for this site that it could relocate in the future should be able to eventually relocate the facilities in the near future.	Existing	All	1-1 1-2 3-1 3-2	Twp. OEM, Twp. PD, Twp. DPW	High	High	Municipal Budget	Short	High	PR
EA-2	DEBRIS - Clearing debris from North Branch of Rancocas Creek	N/A	Flood	3-1	Twp. DPW, Twp. Engineer	High	High	State, County grant opportunities	Medium	Medium	NR
EA-3	RELOCATE DPW & POLICE – The southern 1/6th of Township is cleaved by the 1% event flood hazard area. So our police and public works facilities can become cut off from 95% of population. Relocating police and public works to a more central location is a high priority.	New	All	1-1 1-2 3-1 3-2	Twp. OEM, Twp. PD, Twp. DPW	High	High	HMA programs with local or county match	Short	High	PR ES
EA-4	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1	Twp. Council; Planning	Medium	Low	Twp./Public	OG	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
				4-1 5-1							
EA-5	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
EA-6	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
EA-7	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
EA-8	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
EA-9	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
EA-10	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
EA-11	Enhance resilience to severe storms by joining	N/A	Severe Storm	1-1 1-5	Municipality with support	Medium	Low	Municipal Budget	Short Term DOF	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
	the NOAA "Storm Ready" program.			3-1	from County, NJOEM and FEMA						
EA-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	Township Manager	Medium	Low	Municipal Budget	Short	High	PR
EA-13	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	Ongoing	Medium	PR
EA-14	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.

9.12.8 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)
EA-1	3	High	High	Yes	Yes	No	High
EA-2	1	High	High	Yes	Yes	No	Medium
EA-3	4	High	High	Yes	Yes	No	High
EA-4	7	Medium	Low	Yes	Yes	Yes	Medium
EA-5	3	Medium	Medium	Yes	Yes	No	High
EA-6	1	Medium	Medium	Yes	Yes	Yes	Medium
EA-7	3	Medium	Medium	Yes	Yes	Yes	Medium
EA-8	1	Medium	Low	Yes	Yes	Yes	High
EA-9	1	High	Low – High	Yes	Yes	No	High
EA-10	2	Medium	Medium	Yes	Yes	Yes	Medium
EA-11	3	Medium	Low	Yes	Yes	Yes	Medium
EA-12	3	Medium	Low	Yes	Yes	Yes	High
EA-13	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
EA-14	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.12.8.1 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.

9.12.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.12.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Eastampton 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 Eastampton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.12-1: Eastampton Flood Exposure Map

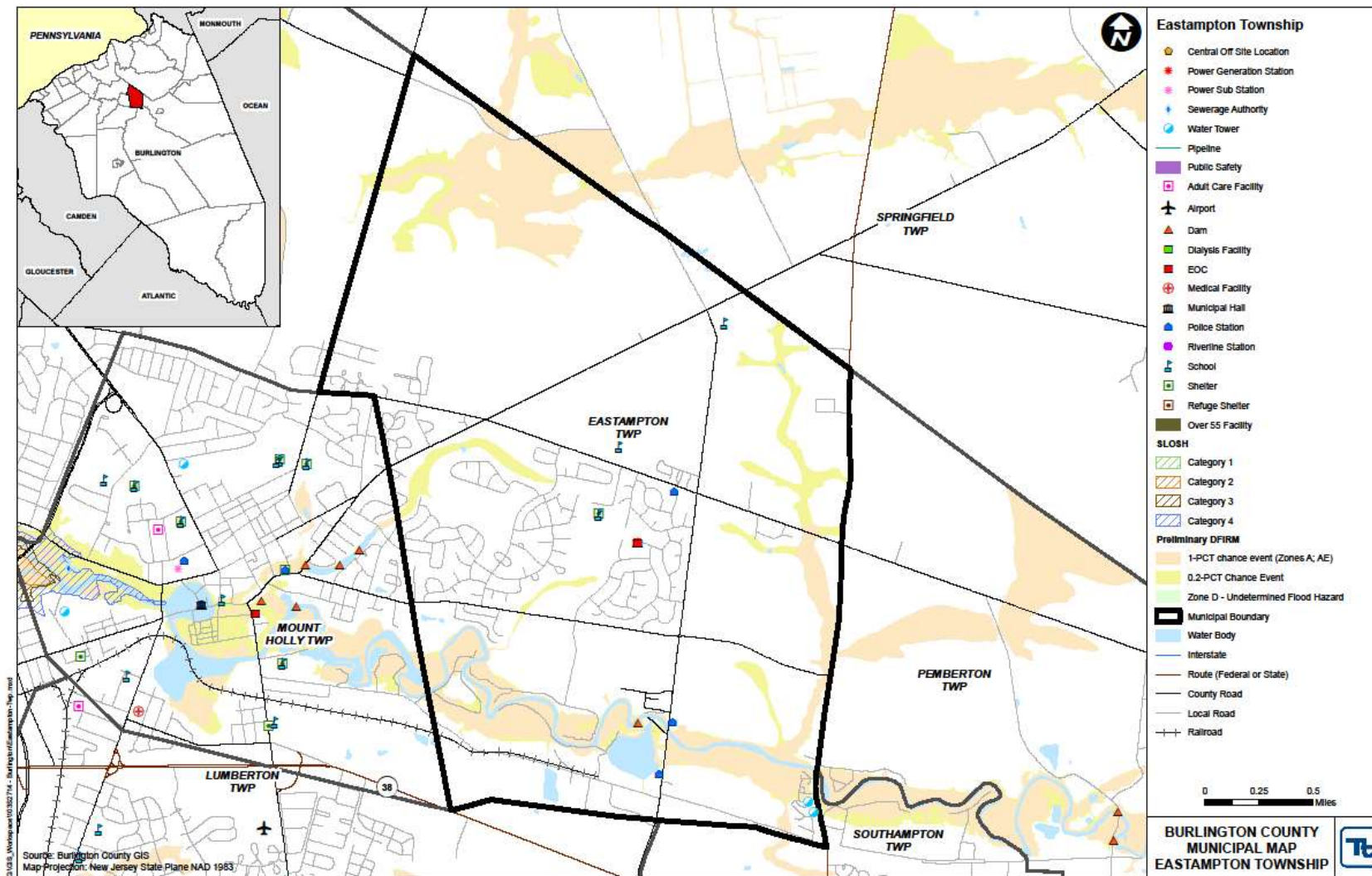
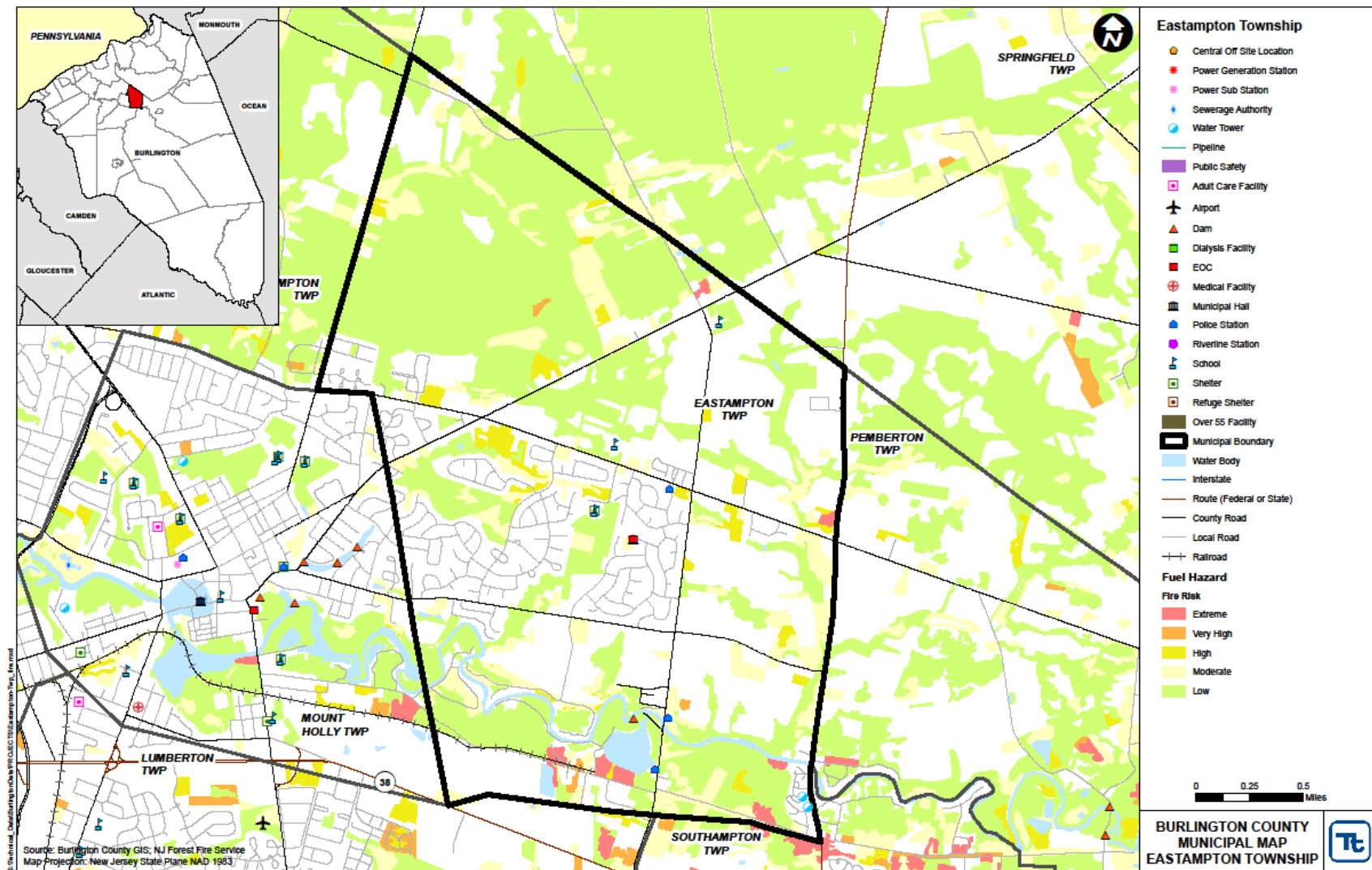


Figure 9.12-2: Eastampton Wildfire Fuel Exposure



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

It is the intention of the Township of Eastampton 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

9.12.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.13 Township of Edgewater Park

This section presents the jurisdictional annex for the Township of Edgewater Park.

9.13.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Linda M. Dougherty Title: RMC/Administrator Address: 400 Delanco Rd., Edgewater Park, NJ 08010 Phone Number: (609) 877-2050 Fax Number: (609) 877-2308 E-mail Address: ldougherty@edgewaterpark-nj.com	Name: John McElwee Title: Emergency Management Coordinator Address: 400 Delanco Rd., Edgewater Park, NJ 08010 Phone Number: (609) 634-3115 Fax Number: (609) 877-2308 E-mail Address: jmcElwee@edgewaterpark-nj.com

9.13.2 PROFILE

9.13.2.1 Population

The population of the Township of Edgewater Park is estimated to be 8,881, based on information gathered during the 2010 U.S. Census.

9.13.2.2 Location

Located along the Delaware River in northern Burlington County, the Township of Edgewater Park is bordered by Burlington Township to the east, Willingboro to the south, Delanco to the west, and the City of Beverly to the northwest. The Township encompasses nearly 3 square miles, and serves as a suburb of Philadelphia, Pennsylvania across the Delaware River. The Delaware River serves as a natural border to the west.

9.13.2.3 Brief History

The Township of Edgewater Park was formed from Beverly Township in February of 1924.¹

9.13.2.4 Governing Body Format

Edgewater Park Township is governed under the Township [http://en.wikipedia.org/wiki/Township_\(New_Jersey\)](http://en.wikipedia.org/wiki/Township_(New_Jersey)) 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/Edgewater_Park_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

9.13.2.5 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
Fox Run	Residential	100	Cooper St.	1202/4.01	None	Potential site
Edgewater Park Crossing	Commercial	5	Route 130	404/2.02	None	Potential site

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

9.13.3 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 15-20, 2007	Edgewater Park declared a local state of emergency during the rain storm of April 15th - 16th. Flood damage occurred primarily in the area of Perkins Ln, North Garden Blvd, Ivy Rd, Gatehouse Apts, and Silver Park West Development; Approx 20 homes were evacuated.
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-20, 2009	Record snowfall impacted and disrupted transportation and public safety from December 19, 2009 through December 21, 2009.
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	None
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	The Township experienced high winds, heavy rain and localized flooding which caused evacuation of residents in the area of Silver Park West, Adams Ave/Hendrickson Ave.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	None

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.

9.13.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$4,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,587,967 500-Year MRP: \$6,312,256 Annualized Loss: \$83,300	Frequent	30	Medium ⁱ
Severe Winter Storm	1% of GBS: \$5,898,790 5% of GBS: \$29,493,950	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low ^g
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$259,840,000	Frequent	24	Medium ^j
Drought	Not available	Occasional	12	Low ^g
Earthquake	500-Year MRP: \$376,182 2,500-Year MRP: \$8,810,212 Annualized Loss: \$8,041	Low	6	Low
Landslides	Not available	Occasional	36	High ^h

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 Low Risk, while project team estimates High Risk.
- Client input suggested High Risk, while project team estimates Medium Risk.
- Client input suggested Low Risk, while project team estimates Medium Risk.

9.13.5 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 Edgewater Park indicated that the municipality has good planning, regulatory, administrative, technical, and fiscal capability; good community resiliency and community political capability; and a good political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

Funding to reduce risk factors, implement planning and upgrade/ expand infrastructure improvements is of high concern.

9.13.5.1 Legal and Regulatory Capability

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

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	1997		Title 15, Chapter 15.04	Construction/Inspections	+	+	
2) Zoning Ordinance	X	2006		Title 16 Ordinance 17-2006	Planning Board, Township Committee, Zoning Officer	+		
3) Subdivision Ordinance	X	2006		Title 16 Ordinance 17-2006	Planning Board, Township Committee, Zoning Officer	+		
4) NFIP Flood Damage Prevention Ordinance						-		Do Not have one in place
4a) Cumulative Substantial Damages								
4b) Freeboard								
5) Growth Management	X	2000		Master Plan	Planning Board, Township Committee	O	O	Town is substantially developed
6) Floodplain Management / Basin Plan			X		Township Committee	-	-	Long term maintenance plan needs to be developed. Infrastructure improvements are needed

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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					
7) Stormwater Management Plan/Ordinance	X	2007		Title 16 Chapter 16.200 Ordinance 7-2007	Township Committee	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X	2007			Planning Board, Township Committee	+	+	
9) Capital Improvements Plan	X	Annual Budget				+	+	
10) Site Plan Review Requirements	X	2006		Title 16 Chapter 62-65	Inspections, Professional Services	+	+	
11) Open Space Plan	X	2000			Township Committee			Approved by Referendum
12) Stream Corridor Management Plan			X					Flooding & Maintenance Improvements needed; stream jointly owned by public and private entities/parties
13) Watershed Management or Protection Plan	X	2007		Title 16 Chapter 16.200	Planning Board, Township Committee	+	+	Ordinance No. (s): 5-2005, 6-2005, 2009-13 & 2009-14
14) Economic Development Plan	X				Planning Board, Township Committee	+	+	Various initiatives: Route 130 Corridor Plan, Master Plan
15) Comprehensive Emergency Management Plan	X	2000			Township Committee,	+	+	Joint effort of various organizations including township, schools, fire,



SECTION 9.13: TOWNSHIP OF EDGEWATER PARK

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					
					OEM			etc
16) Emergency Response Plan								
17) Post Disaster Recovery Plan						-	-	Review and implementation is needed
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement								Follow state statutes
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]								None

9.13.5.2 Administrative and Technical Capability

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

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	Professional Services
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Professional Services, Construction Code Official
3) Planners or engineers with an understanding of natural hazards	Y	Professional Services
4) NFIP Floodplain Administrator	N	
5) Surveyor(s)	Y	Professional Services
6) Personnel skilled or trained in GIS applications	Y	Professional Services
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Emergency Management Coordinator
9) Grant Writer(s)	Y	Professional Services/Staff
10) Staff with expertise or training in benefit/cost analysis	N	

9.13.5.3 Fiscal Capability

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

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	No
10) State mitigation grant programs	Yes
11) Other	

9.13.5.4 Community Classifications

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

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 Edgewater Park'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/>

9.13.6 MITIGATION STRATEGY

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

9.13.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.13.7. Actions that are in not yet complete or are ongoing have been carried over to this plan update.

SECTION 9.13: TOWNSHIP OF EDGEWATER PARK

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			Funding for projects is difficult – budgetary constraints.
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate, or flood proof these properties		X	X			Funding for projects is difficult – budgetary constraints as well as limited staffing and resources
Investigate ways to improve and mitigate repetitive flooding of Sewer Treatment Plant	X					Funding for projects is difficult – budgetary constraints as well as limited staffing
Restructure and rebuild seawall along river front which is causing increased flooding in the general area	X					Funding for projects is difficult – budgetary constraints

9.13.6.2 Hazard Vulnerabilities Identified

The Township indicated that sediment within Bogg's Ditch contributes to flooding of several Edgewater Park properties. In addition, the Township cited issues with flooding around Adams Avenue due to the failure of pump stations and overtopping at the Adams Avenue Basins. Areas in and around the Silver Park West age restricted development continuously floods due to lack of stormwater infrastructure needs.

In the Township of Edgewater Park, an estimated 0 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 4% is located within the 1% annual chance flood area. A total of \$0 (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 Edgewater Park has a total of 14 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 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)
Edgewater Park (T)	14	4	\$35,201	0	0	0	0	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			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.

9.13.7 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
EP-1	Bogg's Run - implement improvements to increase the capacity of culverts at the Light Rail Line and Burlington Avenue	Yes	Flood	1-1 3-1	Lead: Delanco OEM, Edgewater OEM Support: County OEM, NJ Transit	High	High	Grants/ Local	Short Term	High	NR
EP-2	Adams Avenue Basins – remove separating embankment between the two basins	Yes	Flood	1-1 3-1	Lead: Edgewater OEM Support: County OEM,	High	High	Grants/ Local	Short Term	High	NR
EP-3	Adams Avenue Basins – construct new automated pump station with backup generator	Yes	Flood	1-1 3-1	Lead: Edgewater OEM Support: County OEM,	High	High	Grants/ Local	Short Term	High	NR
EP-4	Construct separate 8" discharge line for Roosevelt Pump Station so Adams Avenue Pump Station and Roosevelt Pump Station no longer need to share the line to the gravity drain	Yes	Flood	1-1 3-1	Lead: Edgewater OEM Support: County OEM,	High	High	Grants/ Local	Short Term	High	NR
EP-5	Expand stormwater infrastructure and construct discharge line and construct automated pump station with backup generator: Silver Park West age restricted development	Yes	Flood	1-1 3-1	Lead: Edgewater OEM Support: County OEM,	High	High	Grants/ Local	Short Term	High	NR
EP-6	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2	Twp. Committee; Planning	Medium	Low	Twp./Public	OG	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							
EP-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
EP-8	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
EP-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	Medium	ES
EP-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
EP-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
EP-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	Medium	PR
EP-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
EP-14	Provide public education and outreach on proper installation and/or use of	N/A	Severe Storm	1-5 5-1 5-3	Municipal Clerk	Medium	Low	Municipal Budget	Short	H	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
	backup power										
EP-15	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	Ongoing	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.

9.13.8 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)
EP-1	2	High	High	Yes	Yes	No	High
EP-2	2	High	High	Yes	Yes	No	High
EP-3	2	High	High	Yes	Yes	No	High
EP-4	2	High	High	Yes	Yes	No	High
EP-5	2	High	High	Yes	Yes	No	High
EP-6	7	Medium	Low	Yes	Yes	Yes	Medium
EP-7	3	Medium	Medium	Yes	Yes	No	High
EP-8	1	Medium	Medium	Yes	Yes	Yes	Medium
EP-9	3	Medium	Medium	Yes	Yes	Yes	Medium
EP-10	1	Medium	Low	Yes	Yes	Yes	High
EP-11	1	High	Low – High	Yes	Yes	No	High
EP-12	2	Medium	Medium	Yes	Yes	Yes	Medium
EP-13	3	Medium	Low	Yes	Yes	Yes	Medium
EP-14	3	Medium	Low	Yes	Yes	Yes	High
EP-15	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.13.8.1 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.

9.13.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.13.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Edgewater Park 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 Edgewater Park has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.13-1: Edgewater Park Flood Exposure Map

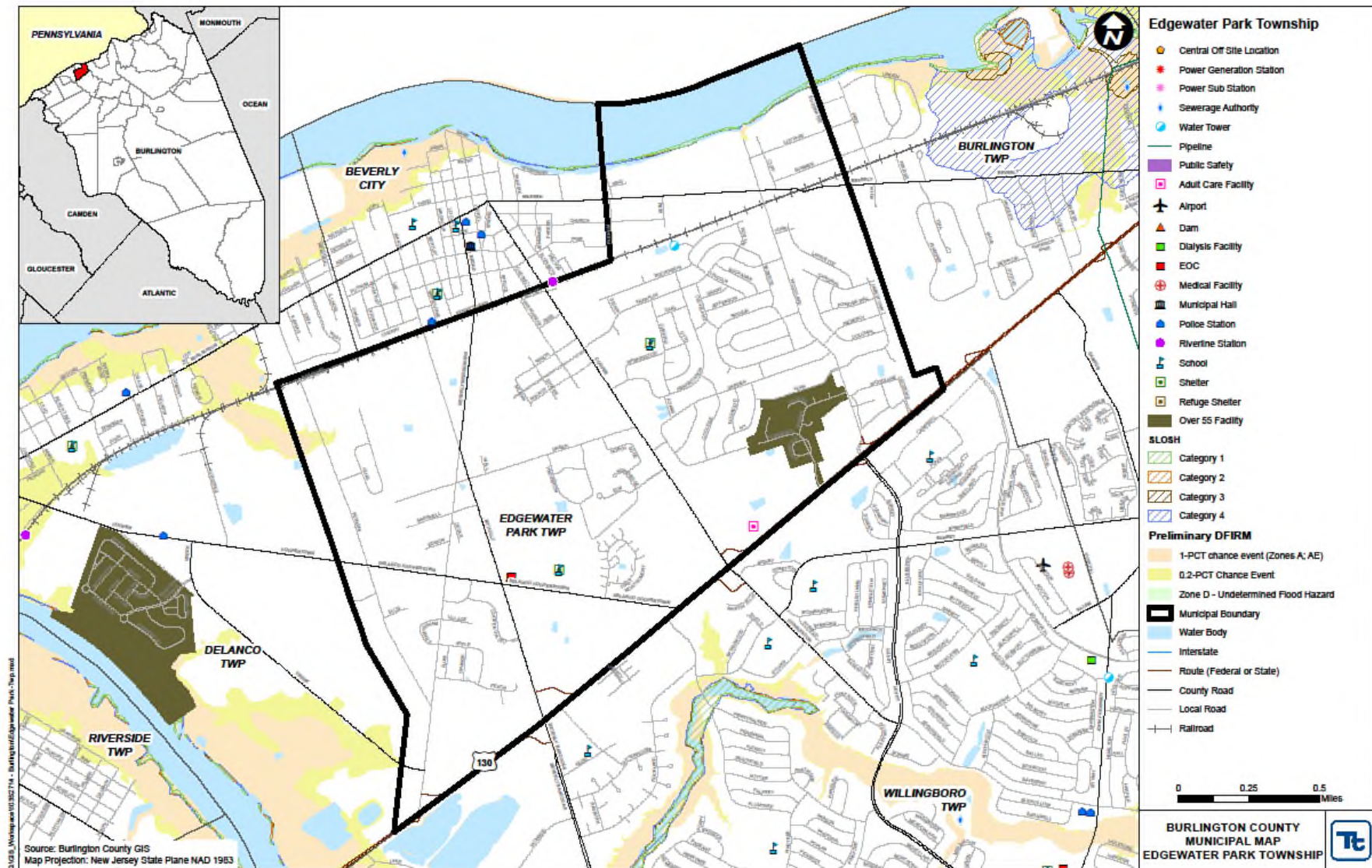
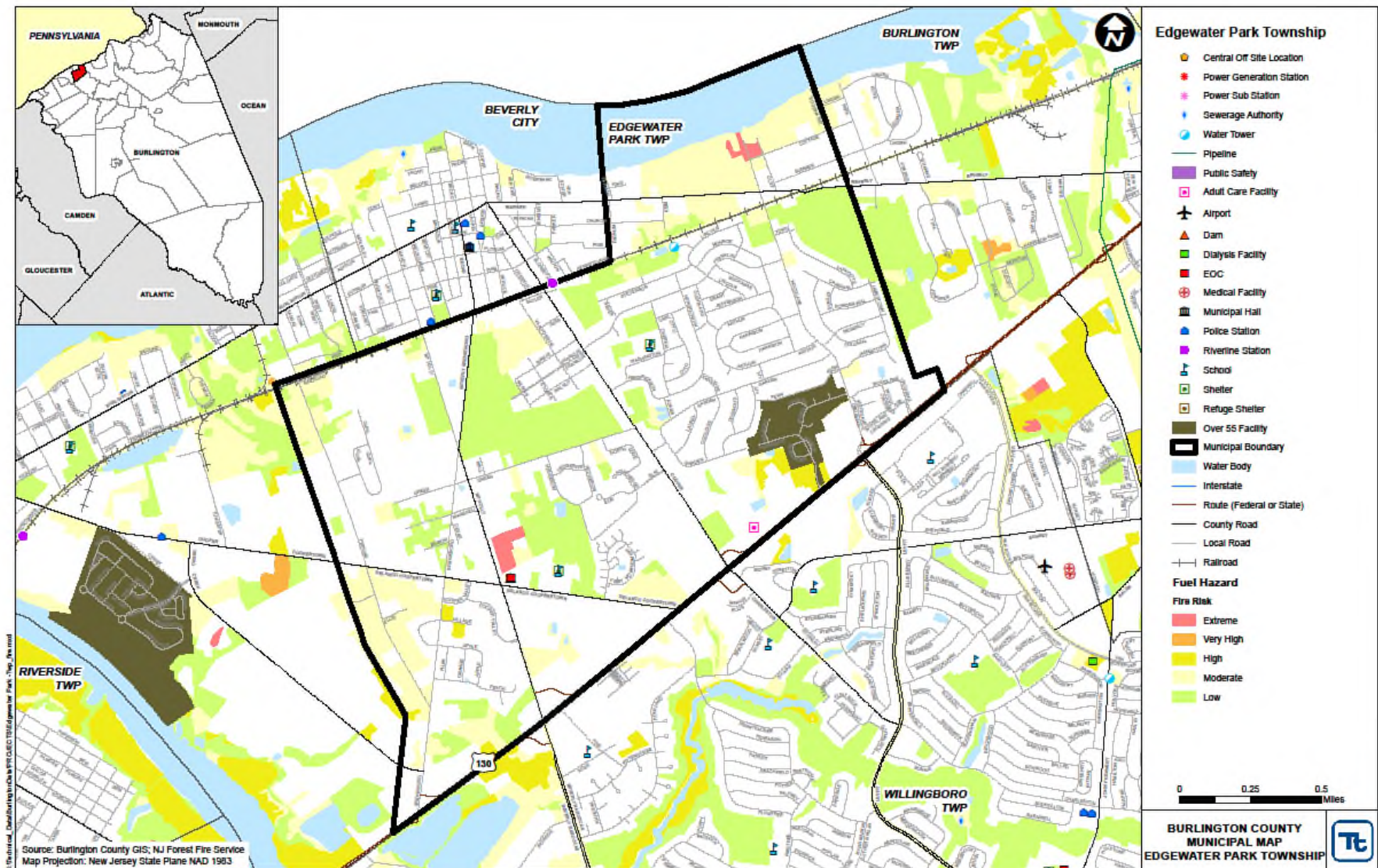


Figure 9.13-2: Edgewater Park Wildfire Fuel Exposure



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

It is the intention of the Township of Edgewater Park to incorporate mitigation planning as an integral component of daily municipal operations. The Township noted that they adopted the 2008 County HMP as the Township plan, and incorporated hazard mitigation planning into their regulatory stormwater management ordinance. The following table contains a list of additional 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.		
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	

9.13.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.14 Township of Evesham

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

9.14.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Bryan Ward Title: Asst. Fire Chief/Deputy OEM Coordinator Address: 26 E. Main St., Marlton, NJ 08053 Phone Number: (856) 983-2210 Fax Number: (856) 983-9404 E-mail Address: bward@eveshamfire.org	Name: Lou Cavaliere Title: Firefighter/Inspector, Fire Department Address: 26 E. Main St., Marlton, NJ 08053 Phone Number: (856) 988-1010 Fax Number: (856) 985-9141 E-mail Address: lcavaliere@eveshamfire.org

9.14.2 PROFILE

9.14.2.1 Population

The population of the Township of Evesham is estimated to be 45, 538, based on information gathered during the 2010 U.S. Census. The Township of Evesham contains the historical Village of Marlton, a U.S. Census Bureau Census Designated Place (CDP). According to the 2010 Census, an estimated 9,031 of Evesham's 45, 538 residents live within the Marlton CDP.

9.14.2.2 Location

Evesham Township is located on the western border of Burlington County. The township is bordered by Mount Laurel to the north and Medford to the east. In addition, Evesham Township is bordered by the Camden County municipalities of Waterford to the south, Berlin to the south-west, Voorhees to the west, and Cherry Hill to the north-west.

9.14.2.3 Brief History

Evesham Township, NJ was officially established in 1688, covering present day Mount Laurel, Medford and parts of Hainsport, Lumberton, and Shamong. By 1871 the above townships became separate entities and Evesham took its present borders.

The Village of Marlton was established in 1758, although then known as Evesham. The name Marlton, named for the fertilizer marl that was mined at several sites to the north and west of Marlton beginning in 1806, came into use in 1845. Evesham's Post Office was established in 1808 at what was to become Marlton. The Evesham Post Office was officially renamed Marlton Post Office in 1845 with the renaming of the Village. Marlton continues today as Evesham's Post Office. Marlton is commonly associated and interchangeable with the name Evesham.¹

¹ http://jsf1.homestead.com/Evesham_nostalgia.html

9.14.2.4 Governing Body Format

The governing body format of Evesham Township falls under the Falkner Mayor-Council Plan. Under this form, the Mayor represents the Township at all official functions, presides at all meetings, and votes at these meetings, which are held the first and third Tuesday of each month. He signs bonds, notes, deeds, contracts and written obligations of the township.

The Mayor and Council adopt ordinances, which are the official laws of the Township at their meetings. They also approve Resolutions ratifying their actions on contracts, bonds and official obligations. They pass Proclamations honoring and recognizing individuals and groups.

The Mayor and Council appoint the Township Manager, Township Clerk, Township Tax Assessor, Township Attorney, Municipal Court Judge, Prosecutor, Public Defender, Township Auditor, Bond Counsel and members of the various Boards and Committees created by them.²

9.14.2.5 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 of Evesham. Refer to the map in section 9.14.10) 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
Brixmar Property Group	Commercial	1	101 Rt. 73 S	Bl. 24.21, Lot 1&2	N/A	Michael's Arts and Crafts – under construction
Paramount Square	Commercial	1	300-330 Rt. 73 S	Bl. 4.01, Lot 12&19.08	N/A	Trader Joe's addition – under construction
J & J Development	Commercial	1	250-300 Rt. 73 S	Bl. 22.01, Lot 14, 15, 19	N/A	Wawa Convenience Store and Gas Station
Care One at Greenlawn		1	870 Rt. 70 E	Bl. 16, Lot 3	N/A	Assisted Living Facility
Marlton Assembly of God	Commercial	1	625 E. Main Street	Bl.19, Lot 1&2	N/A	Family Life Center
EPH Group	Residential	49	N. Elmwood Rd.	Bl. 15.08, Lot 3	N/A	Ravenswood – under construction
MiPro Homes	Residential	96	Shay Rd.	Bl. 15, Lots 3,4,5,6 &12	N/A	Sharp Roads Estates

² http://www.evesham-nj.gov/index.php?option=com_content&view=category&id=38&Itemid=80

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
MiPro Homes	Residential	40	Wellsley Way at Church Rd.	Bl. 14, Lot 1&1.01	N/A	Haymerhill
Gladiator Investment	Residential	13	Rt 70 and Whitebridge	Bl. 17, Lot 10	N/A	Evesham Woods
Si-Tam Association	Commercial	1	880 Rt. 73 S	Bl. 35.30, Lot 20	N/A	Hotel and Restaurant
900 Rt. 73 South LLC	Commercial	1	900 Rt. 73 S	Bl. 37.01, Lot 2	N/A	Dunkin Donuts and Child Development center
Newbridge LLC – Willow Ridge Plaza	Commercial	1	700-748 Rt. 73 S	Bl. 35.07, Lot 6&7	N/A	3 additional tenants

9.14.3 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	The Township experienced power outages as a result of the event. In addition, structural collapse was documented on February 10 as a result of the heavy accumulation of snow.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
Winter Storm	DR-1954	Yes	December 26-27, 2010	None

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26- September 5, 2011	The Township experienced power outages, road closures and damage, and flooding as a result of this event. Residential structures experienced flood damage. In addition, elevated call volume and overtime were necessary to clear debris and respond to emergency calls.
Hurricane Sandy	DR-4086	Yes	October 26- November 8, 2012	The Township experienced power outages, road closures and damage, and flooding as a result of this event. Minor damages were recorded on roadways and sidewalks as a result of downed trees, and the MUA pump station experienced minor damage. Residential structures experienced flood damage. In addition, elevated call volume and overtime were necessary to clear debris and respond to emergency calls. Just under \$29K of damages were reported as a result of this event.

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.

9.14.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$26,706,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$10,709,394 500-Year MRP: \$66,500,797 Annualized Loss: \$648,986	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$38,853,350 5% of GBS: \$194,266,750	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$3,640,743,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$2,249,290 2,500-Year MRP: \$52,194,101 Annualized Loss: \$45,897	Low	6	Low
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.

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

9.14.5.1 Legal and Regulatory Capability

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

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							
2) Zoning Ordinance	X	Updated annually		Chapter 160	Community Development	+	+	
3) Subdivision Ordinance	X	Updated annually		Chapter 135	Community Development	+	+	
4) NFIP Flood Damage Prevention Ordinance	X			Chapter 78	Community Development			
5) Floodplain Management / Basin Plan	X	2000		Chapter 160-26	Community Development	+		
6) Stormwater Management Plan/Ordinance	X	2008		Chapter 62 Article IV	Community Development			
7) Comprehensive Plan / Master Plan/ General Plan	X	2011			Community Development	O		
8) Capital Improvements Plan	X	2012						
9) Site Plan Review Requirements	X	2000		Chapter 127	Community Development	+		
10) Open Space Plan	X	2012			Community Development	+		
11) Comprehensive Emergency Management Plan	X	2009 Adopted			Evesham Fire-Rescue			
12) Emergency Response Plan	X	2009		SOPs	PD & FD			
13) Real Estate Disclosure Requirement	X	2008			Planning			

9.14.5.2 Administrative and Technical Capability

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

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	Bach Associates
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Remington, Vernick & Arrango
3) Planners or engineers with an understanding of natural hazards	Y	Bach Associates & Remington, Vernick & Arrango
4) NFIP Floodplain Administrator	Y	Construction Official
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	Y	MIS Department
7) Scientist familiar with natural hazards	Y	Environmental Commission
8) Emergency Manager	Y	Fire Chief
9) Grant Writer(s)	Y	Director- Community Development
10) Staff with expertise or training in benefit/cost analysis	Y	Director- Community Development

9.14.5.3 Fiscal Capability

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

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	No

9.14.5.4 Community Classifications

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

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

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Evesham'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/>

9.14.6 MITIGATION STRATEGY

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

9.14.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.14.7. 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	
Tomlinson Mill Dam & Area Flooding – After the floods the integrity of the Dam was in question and what can be done to be control the flooding in the area.		X				Currently in progress and not complete
Make necessary modifications to the dam as deemed by the study		X				Currently in progress and not complete
Clear stream area of Debris			X	X		The DPW has a system of checking the streams each year
Increase the Water run off capacity of the Tri-Town Plaza shopping center. (Cistern size or retention pond)					X	Discontinued due to location on private property
Send out informational pamphlets to residents regarding wildfires and steps to take to reduce the risk.			X			Continue to provide education material
Firewise landscaping as permitted by the New Jersey Pineland Commission.					X	Provide education material. NJ State Forestry follows the program and provides material in their protection district.

9.14.6.2 Hazard Vulnerabilities Identified

In the Township of Evesham, an estimated 1,450 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 \$298,462,000 (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 Evesham has a total of 159 NFIP policies, 10 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)
Evesham (T)	159	23	\$250,315	2	0	10	12	147

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.

9.14.7 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
EV-1	Remove and replace the spillway and culvert at the Tomlinson Mill Dam on Tomlinson Mill Rd.	Existing	Flood	2-1 3-1	Lead: Twp. Engineer Support: Twp., NJDEP, Pinelands Commission	High	High	Capital Improvements Budget	Short	High	SP
EV-2	Evesham Fire-Rescue will continue to assess and update wildfire hazard mapping for Evesham Township in cooperation with the NJ State Forestry. Evesham Fire-Rescue (EFD) will work toward making all mapping information available on the EFR website for the public to review. In addition EFD will provide educational information on the website on actions that homeowners can take to help reduce the risk to life and property from wildfires. EFD will continue to work with the NJ State Forestry in fuels management (control burns) as they determine necessary.	N/A	Wildfire	3-1 4-1 5-1	Evesham Fire-Rescue	High	Low	Budget	Short	High	PE
EV-3	The township DPW will increase their salt storage capabilities for use during	N/A	Winter Storm	1-1 3-1	Public Works MUA School District	Medium	Medium	Budget	Short	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
	winter storms. In addition the DPW will continue to pre-treat roadways with brine and maintain a plan for the clearing and removal of snow.										
EV-4	The township DPW will continue to clear debris and any clogging from storm drains and streams on a regular basis to ensure good flows and to limit flooding. This has been an on-going project for several years.	N/A	Flooding	1-1	Public Works	Medium	Low	Budget	Short	Medium	PR
EV-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	Evesham Twp 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
EV-6	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	PE
EV-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	Medium	Low	Twp./Public	On-going	Medium	PR
EV-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
EV-9	Improve municipal communications systems	N/A	All Hazards	3-2	Municipality with support	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
	to include information sharing with county and surrounding municipalities.				from County, NJOEM and FEMA						
EV-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	Medium	ES
EV-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
EV-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	Medium	PP
EV-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	PR
EV-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
EV-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	PP
EV-16	Support the mitigation of vulnerable structures via retrofit (eg. Elevation, flood-proofing) or relocation to protect	Existing	Flood, Severe Storm	1-1 2-1 2-2	Municipality (via Municipal Engineer/NFIP Floodplain Administrator)	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
	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.				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.

9.14.8 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)
EV-1	1	High	High	Yes	Yes	Yes	High
EV-2	1	Medium	Low	Yes	Unknown	Yes	Medium
EV-3	1	High	Medium	Yes	No	Yes	Medium
EV-4	1	Medium	Low	Yes	No	Yes	Medium
EV-5	1	High	Low	Yes	Yes	Yes	Medium
EV-6	1	Medium	Low	Yes	No	Yes	Low
EV-7	7	Medium	Low	Yes	Yes	Yes	Medium
EV-8	3	Medium	Medium	Yes	Yes	No	High
EV-9	1	Medium	Medium	Yes	Yes	Yes	Medium
EV-10	3	Medium	Medium	Yes	Yes	Yes	Medium
EV-11	1	Medium	Low	Yes	Yes	Yes	High
EV-12	2	Medium	Medium	Yes	Yes	Yes	Medium
EV-13	3	Medium	Low	Yes	Yes	Yes	Medium
EV-14	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
EV-15	6	Medium	Low	Yes	Yes	Yes	Medium
EV-16	3	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.14.8.1 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.

9.14.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.14.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Evesham 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 Evesham has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.14-1: Evesham Flood Exposure Map

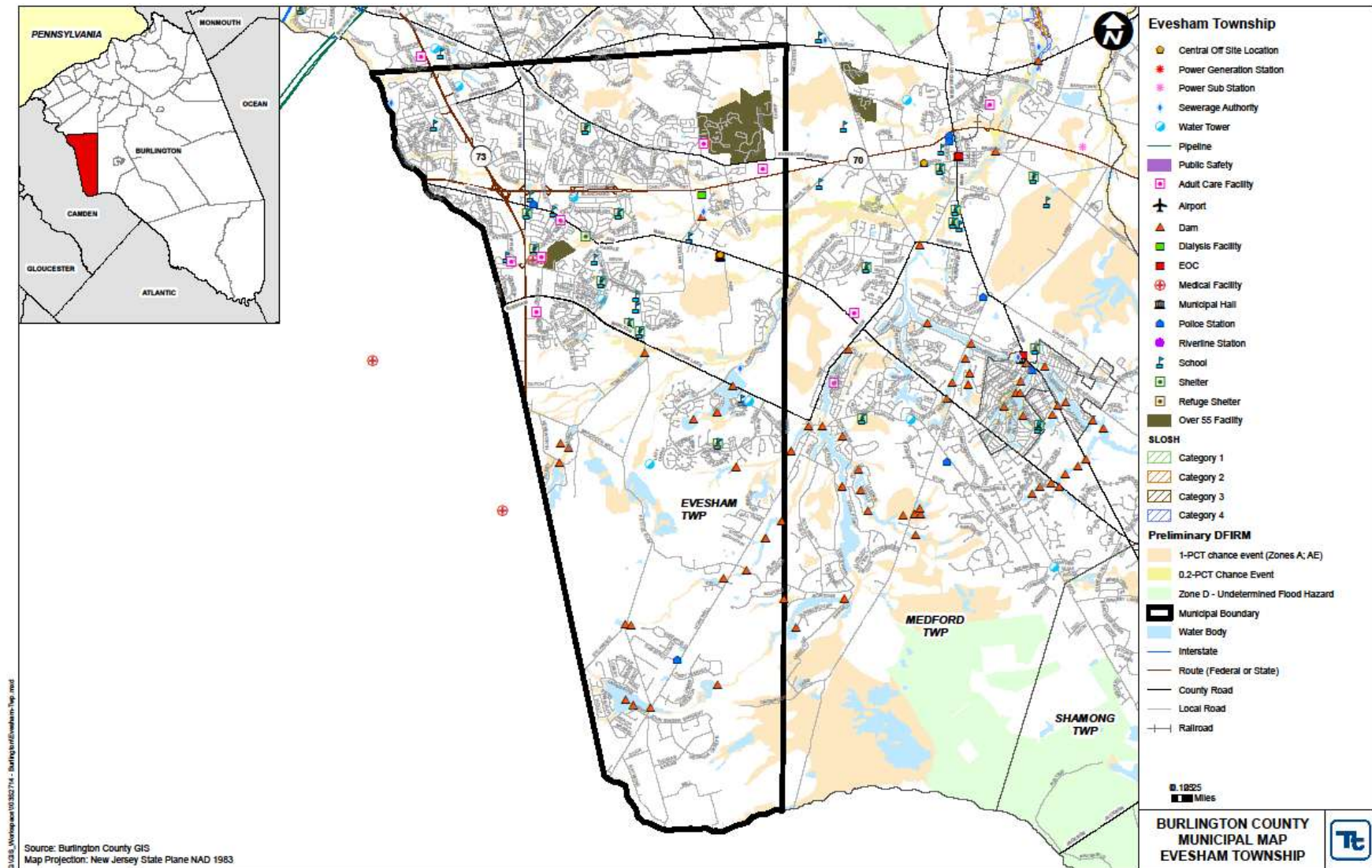
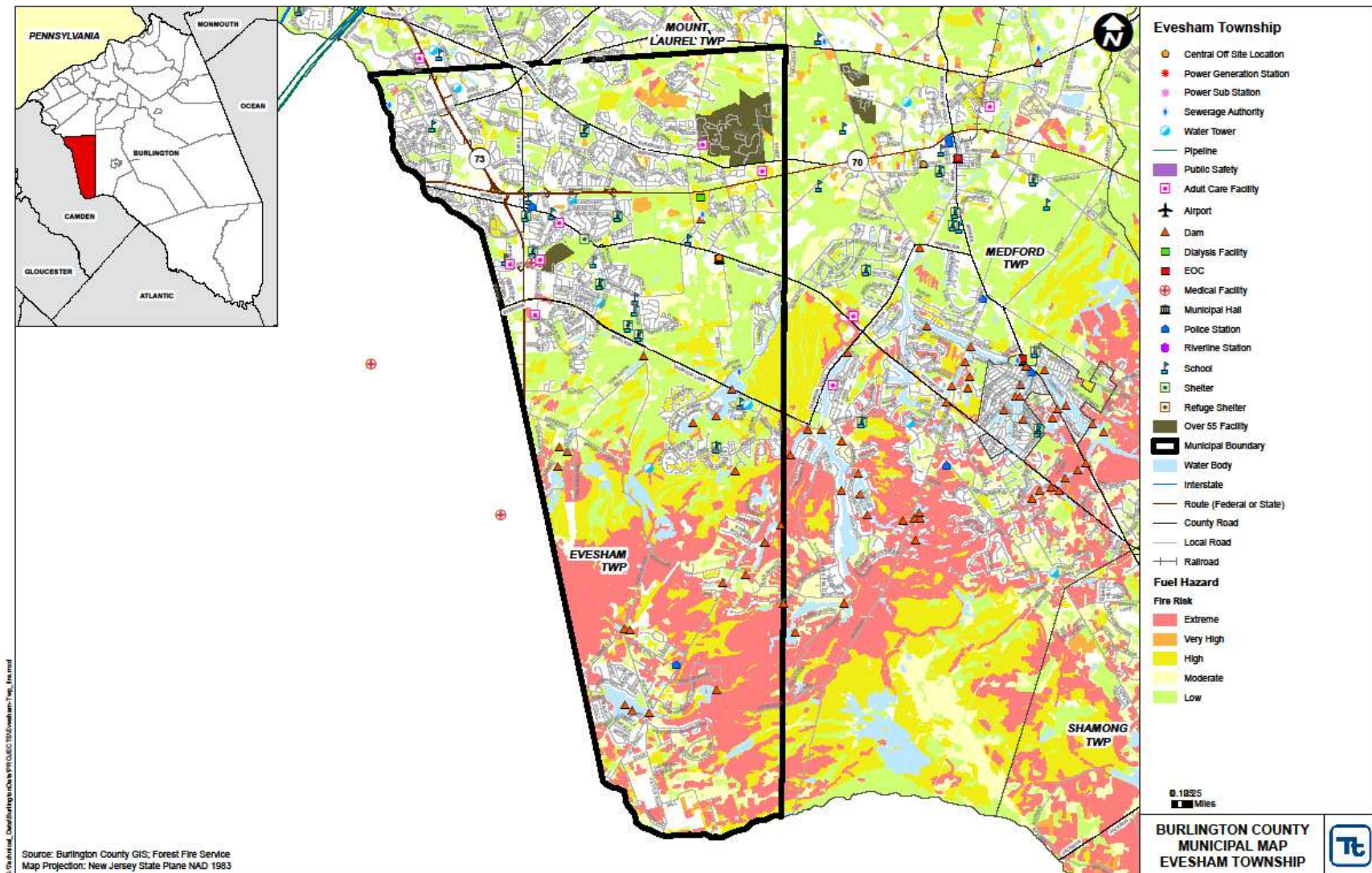


Figure 9.14-2: Evesham Wildfire Fuel Exposure



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

It is the intention of the Township of Evesham 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	

9.14.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.15 Borough of Fieldsboro

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

9.15.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Joseph Conlin Title: Public Safety Director Address: 204 Washington St., Fieldsboro, NJ 08508 Phone Number: (609) 298-9054 Fax Number: (609) 298-0816 E-mail Address: joecool911@verizon.net	Name: David Hansell Title: Mayor Address: : 204 Washington St., Fieldsboro, NJ 08508 Phone Number: 609-298-6344 Fax Number: 609-298-1552 E-mail Address: mayor.fieldsboro@gmail.com

9.15.2 PROFILE

9.15.2.1 Population

The population of the Borough of Fieldsboro is estimated to be 540, based on information gathered during the 2010 U.S. Census.

9.15.2.2 Location

The Borough of Fieldsboro is located in the north-eastern tip of Burlington County. The Borough is naturally bordered by the Delaware River to the north, and surrounded to the east, west and south by the Township of Bordentown. The Borough is comprised of just over one quarter of a square mile.

9.15.2.3 Brief History

Fieldsboro was incorporated as a borough by an Act of the New Jersey Legislature as Fieldsboro on March 7, 1850, within portions of Mansfield Township. It separated from Bordentown Township as an independent municipality around 1894.¹

9.15.2.4 Governing Body Format

Fieldsboro 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.

9.15.2.5 Growth/Development Trends

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

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

9.15.3 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	NA
Fire	FM-2695	Yes	May 15-19, 2007	NA
Winter Storm	DR-1873	Yes	December 19-20, 2009	Minor damage, extensive plowing of roadways.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Minor damage, extensive plowing of roadways.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Residences experienced flooded basement
Winter Storm	DR-1954	Yes	December 26-27, 2010	Roadway closures, extensive plowing
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	Minor damage to Township
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Minor damage, roadway closures, 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.

9.15.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$2,660,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$86,223 500-Year MRP: \$379,174 Annualized Loss: \$5,936	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$428,460 5% of GBS: \$2,142,300	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$31,945,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$26,364 2,500-Year MRP: \$658,027 Annualized Loss: \$587	Rare	6	Medium
Landslides	Not available	Rare	18	Medium

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.

9.15.5 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 Fieldsboro 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.

9.15.5.1 Legal and Regulatory Capability

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

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	Updated 2001		Borough Code 61	Planning Board	+		Currently under review. Updating and codifying
2) Zoning Ordinance	X				Planning Board	+		Currently under review. Updating and codifying
3) Subdivision Ordinance	X	Updated 2001		Borough Code 91	Planning Board	+		Currently under review. Updating and codifying
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 2007		Chapter 179	Planning Board	+		
8) Comprehensive Plan / Master Plan/ General Plan	X	Updated 2/2013			Planning Board			
9) Capital Improvements Plan	N/A							
10) Site Plan Review Requirements	X				Zoning Officer	+		
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	2003			OEM			Currently under review.

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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					
								Updating and codifying
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)]	N/A							

9.15.5.2 Administrative and Technical Capability

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

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	Maser Consulting
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Maser Consulting
3) Planners or engineers with an understanding of natural hazards	Y	Maser Consulting
4) NFIP Floodplain Administrator	N	
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	Maser Consulting
10) Staff with expertise or training in benefit/cost analysis	Y	CFO Tom Cardis

9.15.5.3 Fiscal Capability

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

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	No
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	

9.15.5.4 Community Classifications

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

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 Fieldsboro'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/>

9.15.6 MITIGATION STRATEGY

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

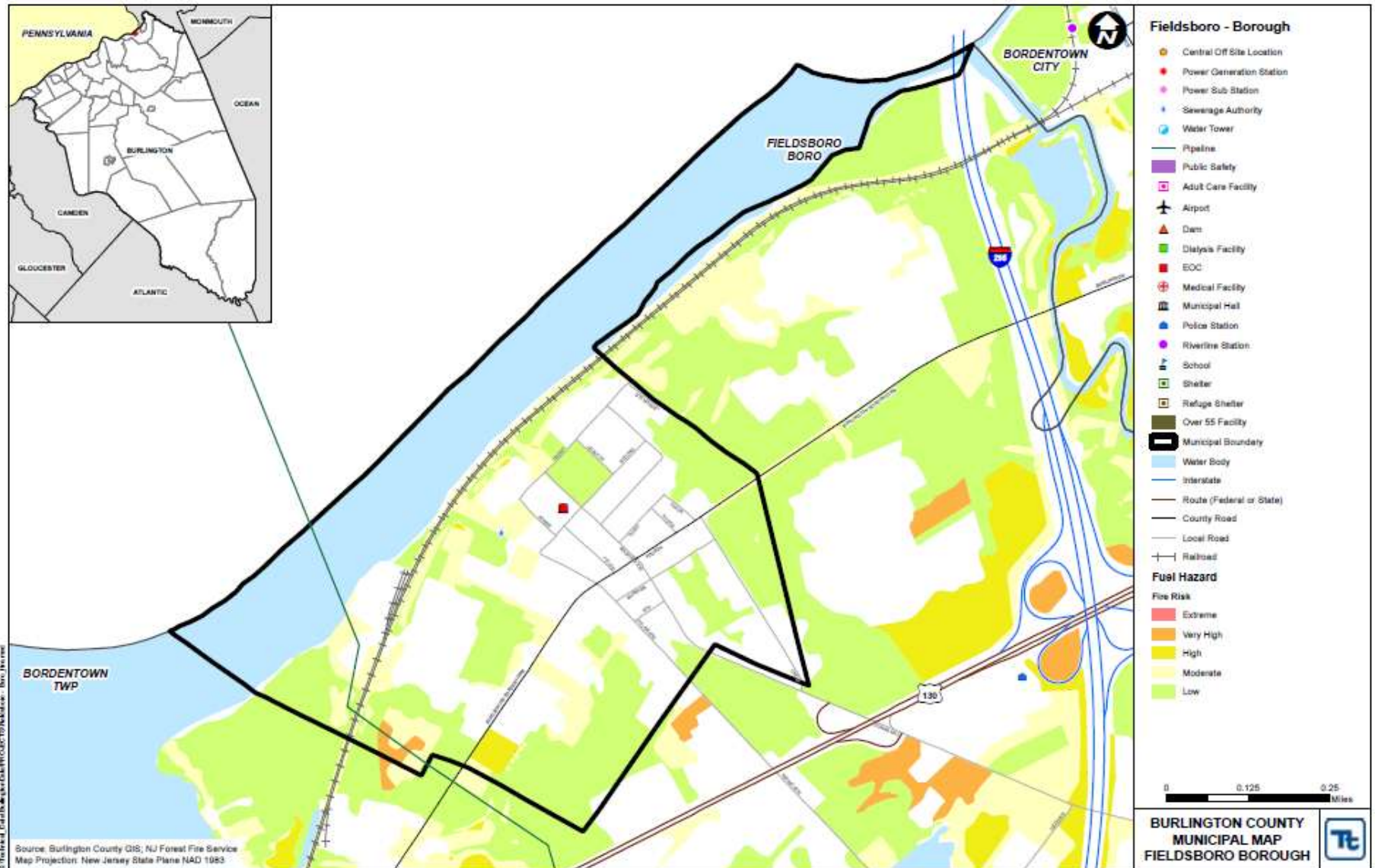
9.15.6.1 Past Mitigation Actions/Status

The Borough of Fieldsboro did not participate in the 2008 Hazard Mitigation Plan. As a result, no past mitigation actions were identified for the Borough.

9.15.6.2 Hazard Vulnerabilities Identified

The Borough of Fieldsboro is vulnerable to a variety of hazards, including wildfire. Though not as prominent as in more wooded municipalities, Fieldsboro does contain some fuels for the wildfire hazard, as depicted in the figure below.

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In the Borough of Fieldsboro, no residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 8% is located within the 1% annual chance flood area. A total of \$3,842,000 (5.3%) 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 Fieldsboro has a total of 0 NFIP policies. FEMA has identified 0 Repetitive Loss (RL) property and 0 Severe Repetitive Loss (SRL) properties in the municipality.

The Borough of Fieldsboro does not participate in the NFIP.

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)
Fieldsboro (B)	0	1	\$707	0	0	0	0	0

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.

9.15.7 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
FB-1	Research, evaluate and consider participating in NFIP and contact NJ DEP for information/meeting	Existing	All Hazards	1-1 1-5 2-1 2-2 3-1 4-1 5-1	Twp. Committee, Planning, OEM, Code Enforcement, NJDEP	Medium	Low	Municipal Government, OEM and Floodplain Admin.	Short Term	Medium	PR
FB-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
FB-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
FB-4	Obtain and install backup power source at the municipal building at 204 Washington Street	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
FB-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 communities	Medium	Low	Municipal Budget	Short Term	High	PR, ES
FB-6	Continue to support the	New and	All Hazards	1-4	Municipal	High	Low – High	Municipal	On-going	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
	implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	Existing			Government, OEM with support from Planning Partners, County Planning, NJOEM, FEMA		(for 5 year update)	Budget, FEMA planning grants			
FB-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
FB-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
FB-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
FB-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
FB-11	Consider acquisition, elevation, or relocation of flood prone structures.	Existing	Flood	1-1, 1-3, 2-2, 3-1	Municipality engineering, OEM with support from County, NJOEM and FEMA	High	High	Municipal Budget, HMA programs with local or county match	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.

9.15.8 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)
FB-1	7	Medium	Low	Yes	Yes	Yes	Medium
FB-2	3	Medium	Medium	Yes	Yes	No	High
FB-3	1	Medium	Medium	Yes	Yes	Yes	Medium
FB-4	3	Medium	Medium	Yes	Yes	Yes	Medium
FB-5	1	Medium	Low	Yes	Yes	Yes	High
FB-6	1	High	Low – High	Yes	Yes	No	High
FB-7	2	Medium	Medium	Yes	Yes	Yes	Medium
FB-8	3	Medium	Low	Yes	Yes	Yes	Medium
FB-9	3	Medium	Low	Yes	Yes	Yes	High
FB-10	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
FB-11	4	High	High	Yes	Yes	No	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.15.8.1 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.

9.15.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.15.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Borough of Fieldsboro 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 Fieldsboro has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.15-1: Fieldsboro Flood Exposure Map

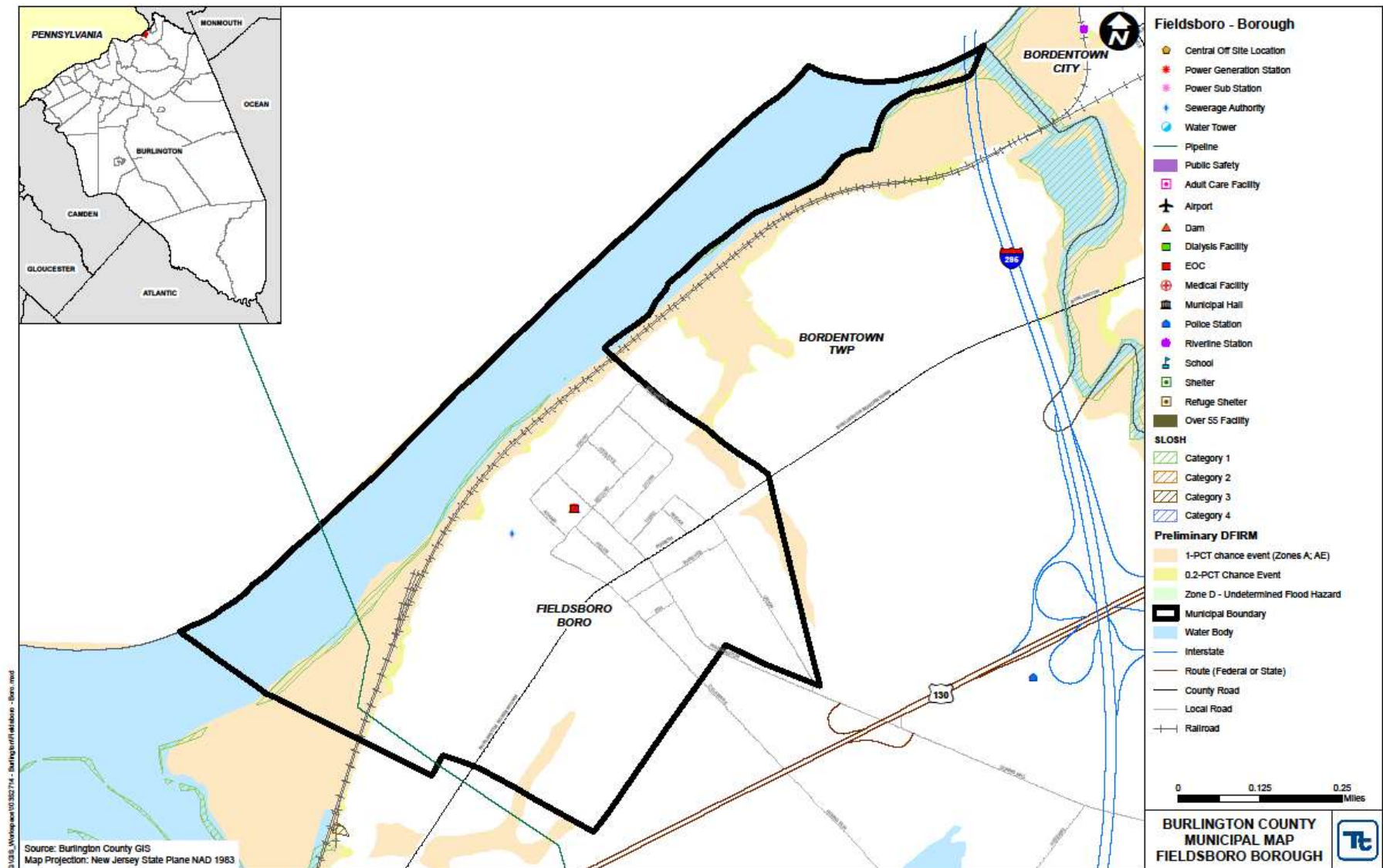
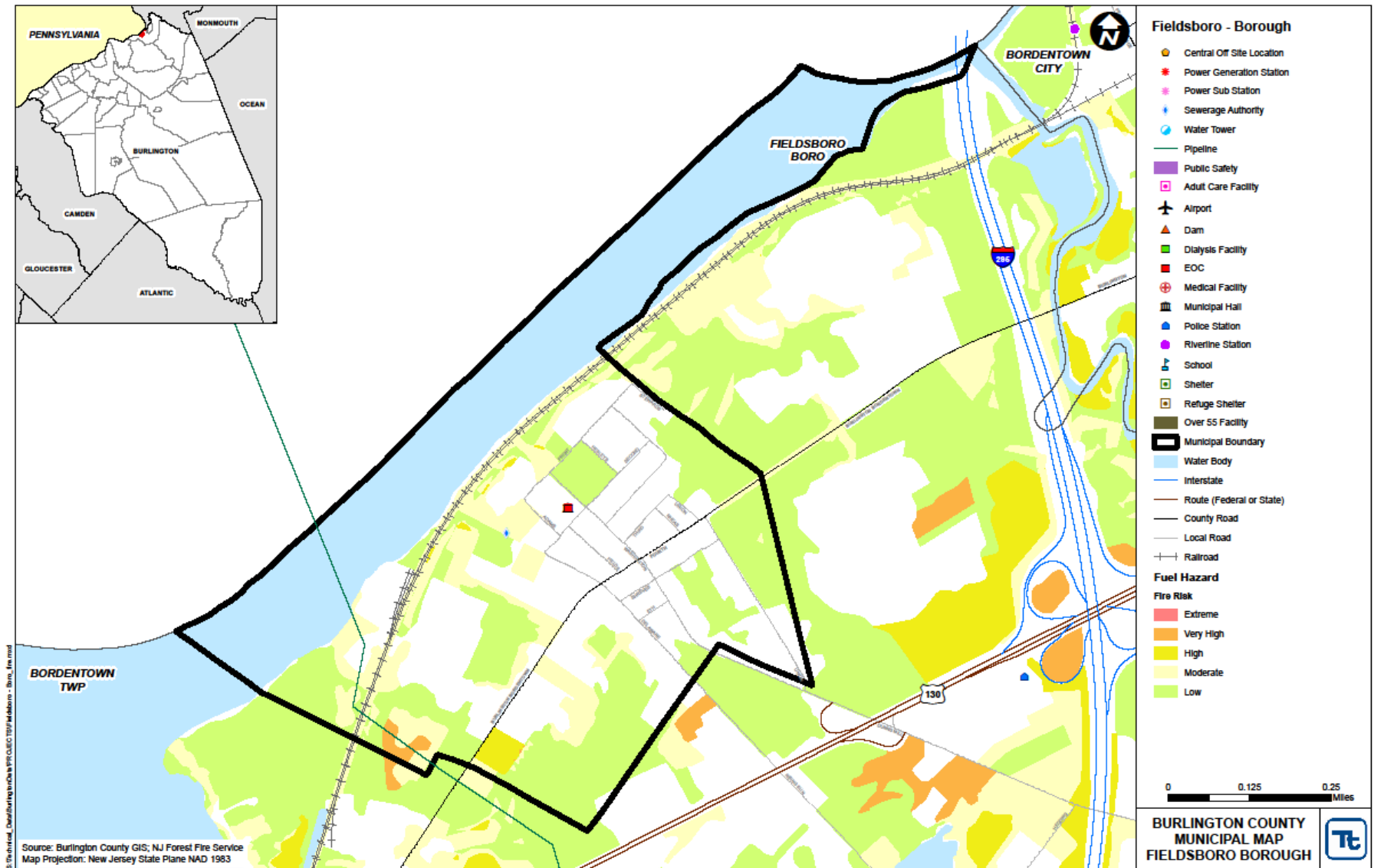


Figure 9.15-2: Fieldsboro Wildfire Fuel Exposure



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

It is the intention of the Borough of Fieldsboro 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

9.15.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.16 Township of Florence

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

9.16.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Philip Drangula Title: Emergency Management Coordinator Address: 711 Broad Street, Florence, NJ 08518 Phone Number: (609) 847-1712 Fax Number: (609) 499-1186 E-mail Address: oem@florence-nj.com	Name: James Karwacki Title: Deputy Emergency Management Coordinator Address: 711 Broad Street, Florence, NJ 08518 Phone Number: (609) 499-2525 Fax Number: (609) 499-1186 E-mail Address: deputyoem@florence-nj.com

9.16.2 PROFILE

9.16.2.1 Population

The population of the Township of Florence is estimated to be 12,109, based on information gathered during the 2010 U.S. Census.

9.16.2.2 Location

The Township of Florence is located in the north-central portion of Burlington County along the Delaware River. The Township is bordered by Mansfield to the east, Springfield to the south, and Burlington Township to the west. To the north, the Township lies directly on the Delaware River, across from Bristol and Levittown, Pennsylvania.

9.16.2.3 Brief History

In 1849, an association of New York financiers organized the Florence City Company and purchased 600 acres of land that was laid out as city lots. The original Constitution of the Florence City Company called for the issuance of five thousand shares of stock. Four thousand shares were used to pay for a tract of land in Mansfield Township along the Delaware River. Along the banks of the Delaware River, the Florence City Company built the Florence Hotel and wharf on the banks of the Delaware River. The hotel was a mainstay for visitors, social gatherings and eventually served as the Municipal Complex until it was destroyed by fire in February 1979.

Despite the promise of the area, the Florence City Company eventually succumbed to poor management and fell into bankruptcy. Despite the demise of the company, the town and its inhabitants remained. Florence was incorporated as a township by an Act of the New Jersey Legislature on March 7, 1872, from the original portions of Mansfield Township.¹

¹ <http://florence-nj.gov/history.html>

9.16.2.4 Governing Body Format

Florence Township is governed under the provisions of the Mayor-Council Plan of the Faulkner Act. Under this form of government the voters elect a Mayor for a four year term and two Council members At-Large and three Council members from three wards for over-lapping terms of four years. The legislative power is vested in the Council and the Executive power is vested in the Mayor. The Mayor appoints a professionally qualified Business Administrator with the advice and consent of Council.²

9.16.2.5 Growth/Development Trends

The following table summarizes major residential/commercial development that are identified for the next five (5) years in the Township of Florence. Refer to the map in section 9.15.10 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
Subaru Warehouse	Commercial	1	Route 130 NB			Building is first of three in the campus setting located at Route 130 and John Galt Way. Building is completed and occupied as of May 2013. Employment totals average around 50. Building is a parts distribution and training center.
Burlington Coat Corporate Offices	Commercial	1	Route 130 NB			Building is under construction as of October 2013. It will be the only building on a single lot serviced by a future private road from Route 130. Employment projections are for 700 to 800 employees. Building will be used as the corporate

² <http://florence-nj.gov/form-of-govt.html>

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New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
						headquarters for the Burlington Coat Factory.

9.16.3 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	Eligible for \$50,056.21
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	Submitted reimbursement request for \$57,368.67
Tropical Storm/Hurricane Irene	DR-4021/ EM-3332	Yes	August 26-September 5, 2011	Submitted reimbursement request for \$17,837.59
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Submitted reimbursement request for \$98,342.73

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. 16.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$18,457,000	Frequent	18	Medium ^h
Severe Storm	100-Year MRP: \$2,107,560 500-Year MRP: \$9,186,065 Annualized Loss: \$135,347	Frequent	30	Medium ^h
Severe Winter Storm	1% of GBS: \$9,225,190 5% of GBS: \$46,125,950	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$320,222,000	Frequent	24	Medium ^g
Drought	Not available	Occasional	14	Medium ^g
Earthquake	500-Year MRP: \$582,037 2,500-Year MRP: \$14,067,701 Annualized Loss: \$12,762	Low	6	Low
Landslides	Not available	Occasional	36	High ⁱ

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 suggested Low Risk, while project team estimates Medium Risk.
- h. Client input suggested High Risk, while project team estimates Medium Risk.
- i. Client input suggested Medium Risk, while project team estimates High Risk.

9. 16.5 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 Florence indicated that the municipality has moderate planning, regulatory, administrative, and technical capabilities; limited fiscal, community resiliency, and community political capabilities; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9. 16.5.1 Legal and Regulatory Capability

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

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	12/21/83		Chapter 64-1	Code Official	+	+	
2) Zoning Ordinance	X	11/6/91		Chapter 91	Administrator	+	+	
3) Subdivision Ordinance	X			Chapter 91-4	Code Official	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	9/1/98		Chapter 79		+	+	
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	X	12/83		Chapter 56	Zoning officer	+	+	
6) Floodplain Management / Basin Plan	x	2002		140 91	Engineer	+	+	
7) Stormwater Management Plan/Ordinance	x	2005		91-75 140	Twp Engineer	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	x	2002		91-40	planning	+	+	
9) Capital Improvements Plan	x			91-38	Planning	+	+	

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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					
10) Site Plan Review Requirements	x			91-40	Construction	+	+	
11) Open Space Plan	x	2005		91-59	Zoning			
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	X	3-2008		Ch5	Committee	0	0	
15) Comprehensive Emergency Management Plan	X	2011			Emergency Management	+	+	
16) Emergency Response Plan	X	2011			Emergency Management	+	+	
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

9.16.5.2 Administrative and Technical Capability

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

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	Contracted Township Engineer and Township Planner
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Contracted Township Engineer and Township Water & Sewer Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Contracted Township Planner and Township Engineer
4) NFIP Floodplain Administrator	Y	Municipal Staff assigned to Building and Construction Code Office
5) Surveyor(s)	Y	Contracted Township Engineer
6) Personnel skilled or trained in GIS applications	Y	Joint Agreement with Burlington County GIS and Burlington County Bridge Commission
7) Scientist familiar with natural hazards	N	No Resource Identified
8) Emergency Manager	Y	Municipal OEM Coordinator
9) Grant Writer(s)	Y	Municipal Administrative Staff
10) Staff with expertise or training in benefit/cost analysis	Y	Municipal Administrative Staff

9.16.5.3 Fiscal Capability

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

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	Yes
10) State mitigation grant programs	Yes
11) Other	No

9.16.5.4 Community Classifications

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

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 Florence'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/>

9.16.6 MITIGATION STRATEGY

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

9.16.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.16.7. 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	
Inventory all trees on Township property and identify immediate hazards Such as low branches, dying limbs, wires in branches, Raised curbs, etc.			X			Public Works on a weekly basis performs a windshield assessment of low lying branches and damaged trees
Establish ordinance for tree replacement & maintenance on private and public property	X					Ordinance not currently in place, investigating further opportunities to enact such with Council and attorney
Map areas of Hazard with GIS to establish priority areas.	X					Mapping not currently in place, investigating further opportunities to pursue such and find funding
Work with Twp Public Works to remove hazards from Twp owned trees. Have Public Service Energy & Gas Remove hazards from power line area.				X		Public Service has implemented stricter trimming policy and have increased cut backs around power lines.
Replace removed trees with new trees of different species that limit growth and limit root base	X					Replacement not currently in place, investigating further opportunities to pursue such and find funding

9.16.6.2 Hazard Vulnerabilities Identified

The Township identifies flood problem areas related to high tide for the Delaware River coupled with heavy rain events. In addition, the Township identified two private residences along Hornberger Avenue that are prone to flooding and two pump stations prone to flooding.

In the Township of Florence, an estimated 326 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 \$27,215,000 (1.8%) 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 Florence has a total of 34 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)
Florence (T)	34	2	\$16,325	0	0	9	9	25

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.

9.16.7 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
FL-1	Purchase and demolish residential structures located at 1740 and 1790 Hornberger Avenue	Existing	Flood	2-2 3-1	Lead: Twp. Engineer Support: Twp. Construction and Public Works Depts.	High	High	FEMA PDM with local Capital Improvements Budget for 25% cost share	DOF	High
FL-2	Identify repetitive flood areas	N/A	Flood	1-3 1-5	Lead: Construction Support: Public Works	High	Low	Operating Budget	Short	High
FL-3	Map repetitive flood areas using GIS	N/A	Flood	1-3 1-5	Fire Department	High	Low	Operating Budget	Short	High
FL-4	Identify landslide potential areas	N/A	Landslide	2-1 3-1	Lead: Twp Administrator Support: Twp Engineer	Medium	Low	Operating Budget	Short	Medium
FL-5	Photograph and document landslide areas to have a historical reference.	N/A	Landslide	2-1 3-1	Lead: Administrator Support: Public Works	Low	Low	Operating Budget	Short	Medium
FL-6	Identify structures in potential landslide area	Existing	Landslide	2-1 3-1	Lead: Construction Support: Administrator	Low	Low	Operating Budget	Short	Medium
FL-7	Post information on township website about hazard mitigation and preparedness tips.	N/A	Severe Storms	5-1 5-2 5-3	Lead: OEM Support: Twp Administrator	High	Low	Operating Budget	Short	High
FL-8	Identify debris management areas throughout town.	N/A	Severe Storm	1-1 2-1	Lead: Public Works Support: Twp Engineer	Medium	Low	Operating Budget	Short	Low

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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
FL-9	Identify areas for snow pile placement to open streets	N/A	Winter Storms	1-1 2-1	Lead: Public Works Support: Twp Engineer	Medium	Low	Operating Budget	Short	Medium
FL-10	Identify strategic reception areas for residents to stage in the event of severe storm	N/A	Severe Storms	1-1 2-1	Lead: OEM	Medium	Low	Operating Budget	Short	Medium
FL-11	Test mass alerting and notification systems for residents, Global connect Nixle Facebook& Twitter	N/A	Severe Storms	5-1 5-2 5-3	Lead: OEM Support: Police	High	Low	Operating Budget	Short	High
FL-12	Advertise social media accounts on Township Website	N/A	Severe Storms	5-1 5-2 5-3	Lead: OEM Support: Administrator	High	Low	Operating Budget	Short	High
FL-13	Install Generators to power strategic reception areas during severe storms	Existing	Severe Storms	1-5	Lead: OEM Support: Construction	Medium	High	PDM,HMGP	DOF	Medium
FL-14	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
FL-15	Where appropriate, seek to retrofit critical facilities in hazard prone areas to protect structures from future damage and retrofit with emergency generators for critical facilities including firehouses and shelters	Existing	All	5-1 5-2 5-3	Twp. Committee	High	Medium	PDM	Short	Medium
FL-16	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	3-2	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High
FL-17	Improve municipal	N/A	All Hazards	1-2	Municipality with	Medium	Medium	Municipal	Short	Medium

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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
	communication systems to include information sharing with county and surrounding municipalities			1-5 3-2	support from County, NJOEM and FEMA			Budget		
FL-18	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	Medium
FL-19	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All Hazards	1-4	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High
FL-20	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 4-2	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
FL-21	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	Medium
FL-22	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program.	N/A	Severe Storm	1-5 5-1 5-3	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium
FL-23	Provide public education and outreach on proper installation and/or use of backup power	N/A	Severe Storm	1-5 4-1	Municipal Clerk	Medium	Low	Municipal Budget	Short	H
FL-24	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	1-1 1-5 2-1 3-1 4-1 5-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium
FL-25	Relocate or elevate Hornberger Ave and Norman Ave Pump Stations to minimize or eliminate damage due to flooding	N/A	Severe Storm Flooding	2-2 3-1 3-2	Lead: Twp Engineer Support: Twp Water & Sewer	Medium	Medium/High	PDM, HMGP	Short Term DOF	Medium

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.

9.16.8 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)
FL-1	2	High	High	Yes	Yes	No	High
FL-2	2	High	Low	Yes	No	Yes	High
FL-3	2	High	Low	Yes	No	Yes	High
FL-4	2	Medium	Low	Yes	No	Yes	Medium
FL-5	2	Low	Low	Yes	No	Yes	Medium
FL-6	2	Low	Low	Yes	No	Yes	Medium
FL-7	3	High	Low	Yes	No	Yes	High
FL-8	2	Medium	Low	Yes	No	Yes	Low
FL-9	2	Medium	Low	Yes	No	Yes	Medium
FL-10	2	Medium	Low	Yes	No	Yes	Medium
FL-11	3	High	Low	Yes	No	Yes	High
FL-12	3	High	Low	Yes	No	Yes	High
FL-13	1	Medium	High	Yes	Yes	No	Medium
FL-14	7	Medium	Low	Yes	Yes	Yes	Medium
FL-15	3	Medium	Medium	Yes	Yes	No	High
FL-16	1	Medium	Medium	Yes	Yes	Yes	Medium
FL-17	3	Medium	Medium	Yes	Yes	Yes	Medium
FL-18	1	Medium	Low	Yes	Yes	Yes	High
FL-19	1	High	Low – High	Yes	Yes	No	High
FL-20	2	Medium	Medium	Yes	Yes	Yes	Medium
FL-21	3	Medium	Low	Yes	Yes	Yes	Medium
FL-22	3	Medium	Low	Yes	Yes	Yes	High
FL-23	2	Medium	Low/Medium	Yes	Yes	Yes	Medium
FL-24	6	Medium	Low	Yes	Yes	Yes	Medium
FL-25	3	Medium	High	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

9.16.8.1 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. 16.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9. 16.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Florence 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 Florence has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.16-1: Florence Flood Exposure Map

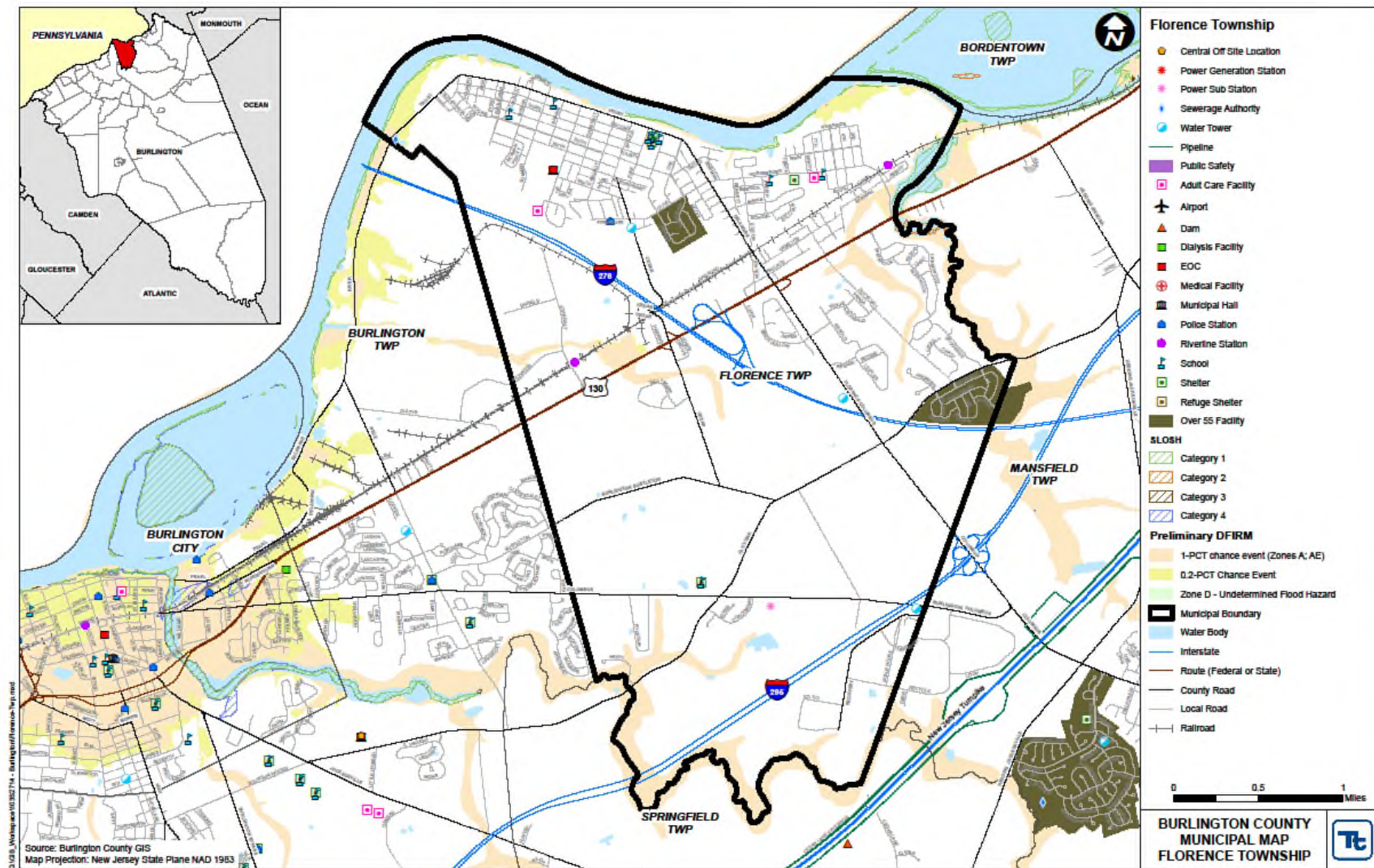
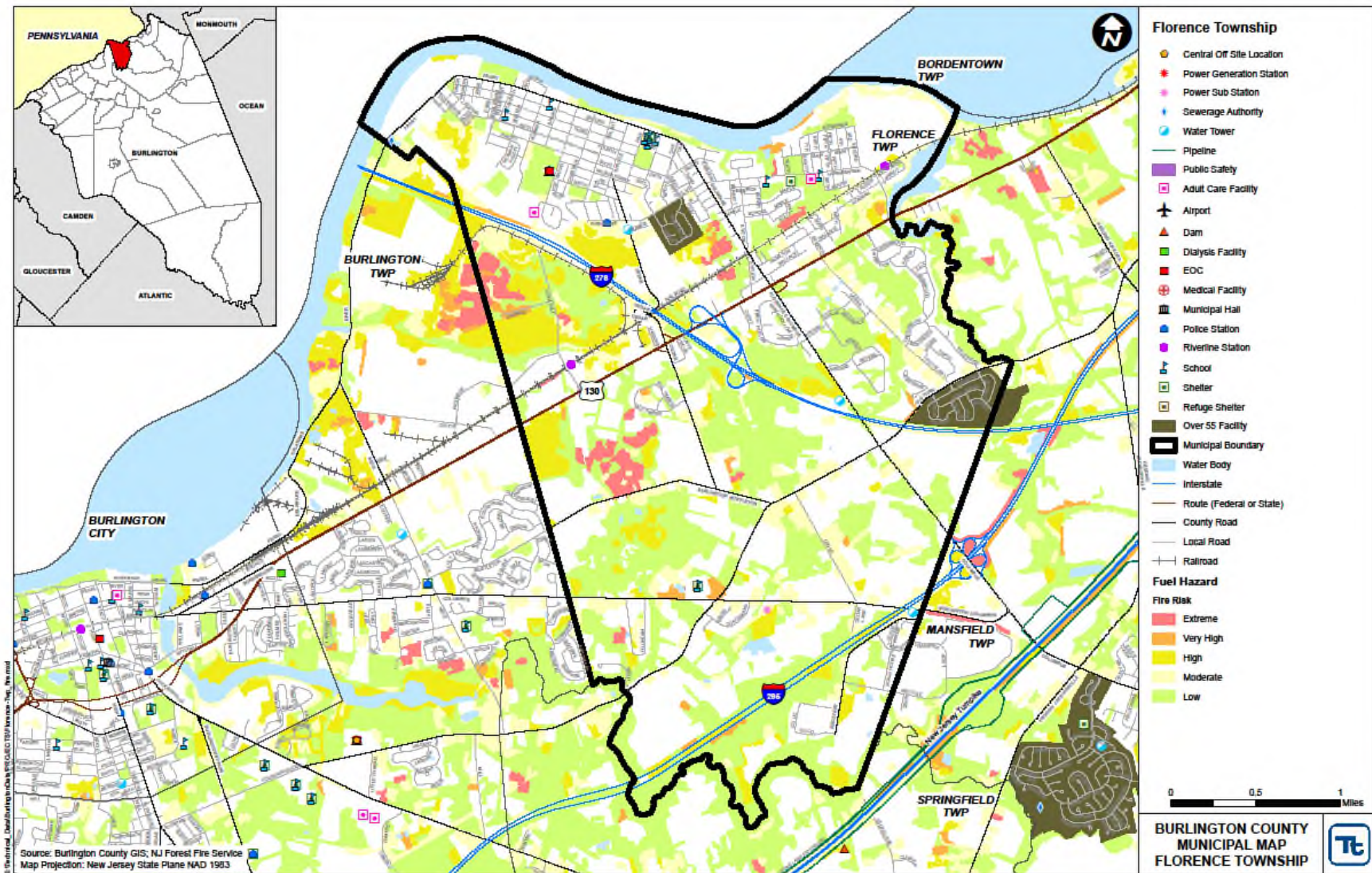


Figure 9.16-2: Florence Wildfire Fuel Exposure



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

It is the intention of the Township of Florence 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.		
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	
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

9.16.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.17 Township of Hainesport

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

9.17.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: William Boettcher Title: OEM Coordinator Address: One Hainesport Centre, PO Box 477, Hainesport, NJ 08036 Phone Number: (609) 784-5173 Fax Number: (609) 267-0438 E-mail Address: wboettcher@hainesporttownship.com	Name: Edward Ruggiano Title: Deputy OEM Coordinator Address: One Hainesport Centre, PO Box 477, Hainesport, NJ 08036 Phone Number: (609) 267-2730 Ext. 115 Fax Number: (609) 267-0438 E-mail Address: eruggiano@hainesporttownship.com

9.17.2 PROFILE

9.17.2.1 Population

The population of the Township of Hainesport is estimated to be 6,110, based on information gathered during the 2010 U.S. Census.

9.17.2.2 Location

The Township of Hainesport is located in north-central Burlington County. The Township is bordered by Westampton to the north, Mount Holly to the east, Lumberton to the south, and Mount Laurel to the west.

9.17.2.3 Brief History

Richard and Margaret Haines of Northamptonshire, England immigrated to the American colonies in 1682. The land grant for which the Haines family emigrated covered approximately 1700 acres, including a portion of the present Mount Laurel Township. Their son, Joseph Haines, who was born in mid-ocean, purchased a tract of land beyond Lumberton covering several hundred acres, including the Village of Long Bridge which was the original name of Hainesport.

During the Revolutionary War, the area of Long Bridge (Hainesport) and surrounding Burlington County found itself in the midst of the area of activity, but never directly in the center stage. There were some minor conflicts, but the deciding battles took place elsewhere; i.e., Trenton, Princeton, Monmouth. Early residents of this area witnessed the march of British, Hessian and American trips across the Long Bridge to Mt. Holly. In 1778, local American patriots destroyed the Long Bridge in order to delay the advance of the Hessian troops to Mt. Holly. A minor skirmish developed with the resulting death of five unnamed American patriots.

The nineteenth century brought about a marked change in the industrial growth of the area, including the change of the area name from Long Bridge to Hainesport. In 1852, an iron foundry was established under the name Columbian Iron Works, and in 1854, a steam saw mill was built. In 1867, the Pennsylvania Railroad built a station in Hainesport.

The Columbian Iron Works became the John D. Johnson Co. Foundry, and this company was to have a notable influence upon the community. It was the major industry of Hainesport and brought prosperity to many residents. The foundry was also responsible for importing many workers which assisted in the growth of Hainesport's population until it closed in 1930.

The Township of Hainesport was incorporated as a township by an Act of the New Jersey Legislature on March 12, 1924.¹

9.17.2.4 Governing Body Format

Hainesport 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.

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

9.17.2.5 Growth/Development Trends

The Township of Hainesport 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

¹ <http://www.hainesporttownship.com/about/history.html>

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

9.17.3 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	Record snowfall disrupted transportation and public safety systems. The Township opened and cleared roads 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.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	None
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	None
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Debris removal throughout the Township as a result of hurricane-force winds. Public Works Department building sustained 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.

9.17.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$23,565,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$982,703 500-Year MRP: \$5,634,614 Annualized Loss: \$70,104	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$4,851,360 5% of GBS: \$24,256,800	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$535,909,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$332,379 2,500-Year MRP: \$7,746,155 Annualized Loss: \$7,235	Low	6	Low
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.

9.17.5 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 Hainesport indicated that the municipality has moderate planning, regulatory, administrative, technical, fiscal, community resiliency, and community political capabilities; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.17.5.1 Legal and Regulatory Capability

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

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 – Chapter 71 & NJAC 5:23	Construction	+	+	New Jersey Uniform Construction Code
2) Zoning Ordinance	X	6/8/1978		Twp. Code Chapter 104	Zoning	+	+	
3) Subdivision Ordinance	X	6/8/1978		Twp. Code Chapter 104	Zoning	+	+	
4) NFIP Flood Damage Prevention Ordinance				Twp. Code Chapter 89	Construction	+	+	Contained in Flood Prevention Damage
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management	X	8/24/1999		Twp. Code chapter 104	Zoning / Land Use	+	+	
6) Floodplain Management / Basin Plan	X			Twp. Code Chapter 104	Construction	+	+	NJ-DEP Regulations
7) Stormwater Management Plan/Ordinance	X	1/24/2006		Twp. Code Chapter 161	Twp. Officials	+	+	
8) Comprehensive Plan / Master Plan/ General Plan	X	8/24/99 update		Twp. Code Chapter 104	Planning / Zoning	+	+	

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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	4/12/1994		Twp. Code Chapter 104	Planning	+	+	
10) Site Plan Review Requirements	X	4/12/2011		Twp. Code Chapter 104	Planning	+	+	
11) Open Space Plan	X	8/25/1987		Twp. Code Chapter 104	Planning	+	+	
12) Stream Corridor Management Plan	X	5/27/2003		Twp. Code Chapter 104	Planning	+	+	
13) Watershed Management or Protection Plan	X	5/27/2003		Twp. Code Chapter 104	Planning	+	+	
14) Economic Development Plan	X	12/10/1996		Twp. Code Chapter 13	Administration			
15) Comprehensive Emergency Management Plan	X	7/2009		N/A	OEM	+	+	EOP
16) Emergency Response Plan	X	7/2009		N/A	OEM	+	+	EOP
17) Post Disaster Recovery Plan	X	7/2009		N/A	OEM	+	+	EOP
18) Post Disaster Recovery Ordinance	-	-	-	-	-	-		Under OEM-EOP plan
19) Real Estate Disclosure Requirement	N/A	N/A	N/A	N/A	N/A	N/A		
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	N/A	N/A	N/A	N/A	N/A	N/A		

9.17.5.2 Administrative and Technical Capability

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

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 and Staff
3) Planners or engineers with an understanding of natural hazards	Y	Alaimo Associates
4) NFIP Floodplain Administrator	Y	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	
8) Emergency Manager	Y	Township OEM
9) Grant Writer(s)	Y	
10) Staff with expertise or training in benefit/cost analysis	Y	Finance Department

9.17.5.3 Fiscal Capability

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

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

9.17.5.4 Community Classifications

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

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 Hainesport'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/>

9.17.6 MITIGATION STRATEGY

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

9.17.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Somerset County Hazard Mitigation Plan is indicated in Section 9.17.7. 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					Lack-of funding/governmental approvals
Identify, document, and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate. Or flood proof these properties.	X					Lack of qualified personnel / funding
Develop a plan and seek funding for back-up electrical and telecommunications systems in local government-owned critical facilities	X					Lack of funding sources, so as to not impact municipal budgets.

9.17.6.2 Hazard Vulnerabilities Identified

In the Township of Hainesport, an estimated 175 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 \$13,001,000 (1.6%) 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 Hainesport has a total of 29 NFIP policies, 3 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)
Hainesport (T)	29	3	\$25,021	0	0	9	11	18

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.

9.17.7 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 businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: • Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. • 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	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

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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
	personal natural hazard risk reduction measures										
HP-2	Incorporate ordinances and/or zoning restrictions to control and mitigate future development in hazard areas, specifically as identified in Section 104 of Hainesport Township Code	N/A	All Hazards	1-1 1-4 2-1	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
HP-3	Obtain and install backup power sources at 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	3-2	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	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 Term 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, 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	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

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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 Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.										
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, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	PR
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	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
HP-11	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
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 and FEMA	Medium	Medium	Municipal Budget	Short	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 and 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	High	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
HP-15	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.

9.17.8 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	Yes	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	Yes	No	Medium
HP-6	1	High	Low – High (for 5 year update)	Yes	Yes	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	Yes	No	Medium
HP-11	3	Medium	Medium	Yes	Yes	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

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.17.8.1 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.

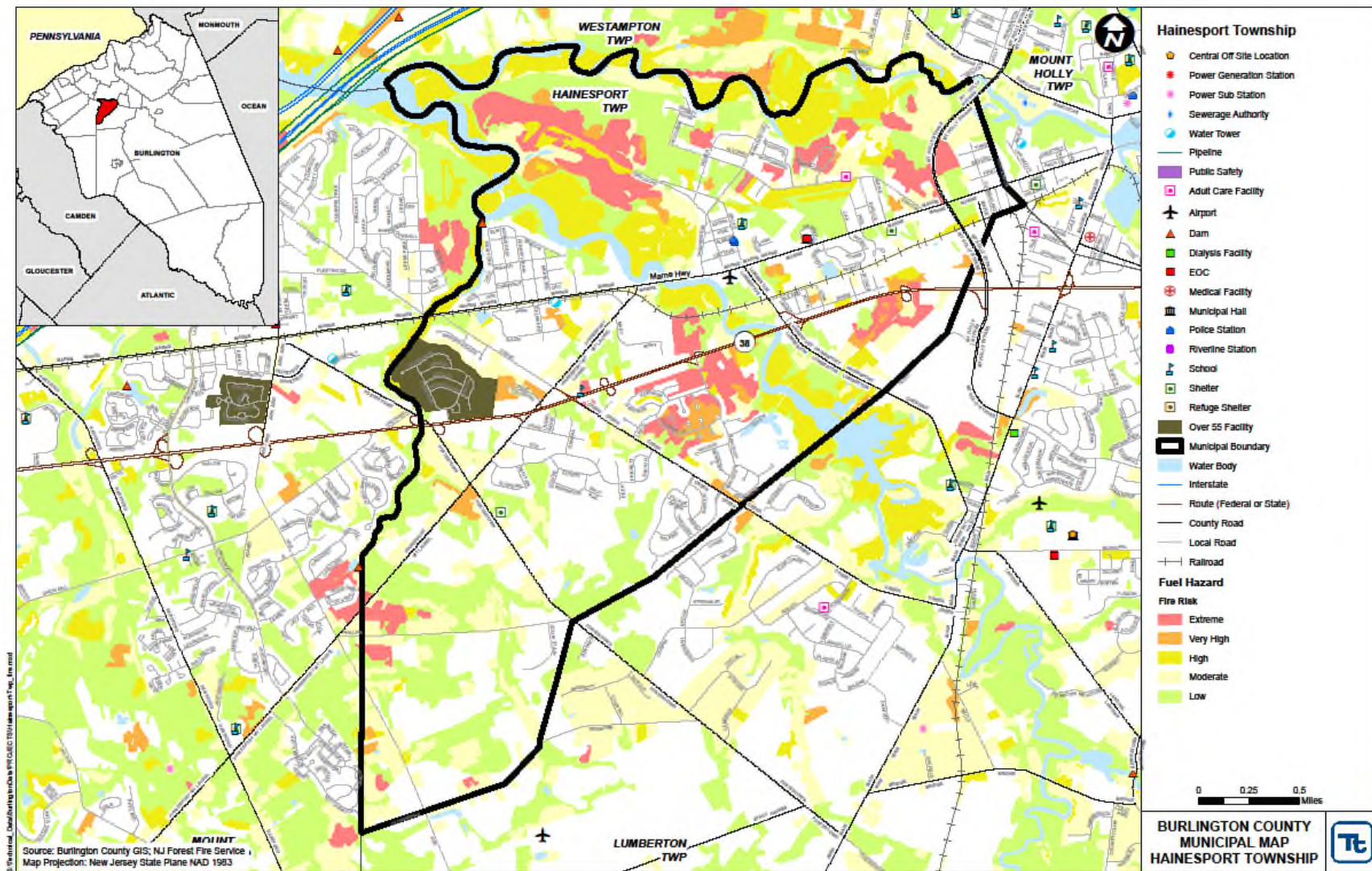
9.17.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.17.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Hainesport 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 Hainesport has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.17-2: Hainesport Wildfire Fuel Exposure



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

It is the intention of Township of Hainesport 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

9.17.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.18 Township of Lumberton

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

9.18.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Lt. Edward Begolly Address: 35 Municipal Dr., Lumberton, NJ 08048 Phone Number: (609) 267-1111 Ext. 125 Fax Number: (609) 267-8284 E-mail Address: ebegolly@lumbertontwp.com	Name: Nicholas Peditto Address: 35 Municipal Dr., Lumberton, NJ 08048 Phone Number: (609) 267-1111 Fax Number: (609) 267-8284 E-mail Address: npeditto@lumbertontwp.com

9.18.2 PROFILE

9.18.2.1 Population

The population of the Township of Lumberton is estimated to be 12,559, based on information gathered during the 2010 U.S. Census.

9.18.2.2 Location

The Township of Lumberton is located in the north-central portion of Burlington County. The township is bordered by Medford and Southampton to the southwest and southeast, respectively, Mount Laurel to the west, Eastampton to the east, Hainesport to the northwest, and Mount Holly to the northeast.

9.18.2.3 Brief History

The village of Lumberton grew out of two bordering towns: Eayrestown, settled by Richard and Elizabeth Eayres in the late 1600's. Eayrestown was the first substantial settlement in this area. The town was responsible for a diversity of commerce including sawmills and gristmills. At one time Eayrestown was the home of a picnic grove that had a carousel and attracted visitors from as far away as Philadelphia. William Foster settled Fostertown in 1735. His plantation was on what is now known as West Bella Bridge Road. Fostertown claimed to be the home of shoemakers, tailors and wheelwrights. There is not much left of these two towns today, but a few houses and street names.

Lumberton was incorporated by an Act of the New Jersey Assembly on March 14, 1860. The town was a hub of commerce and transportation. All types of boats were using the creek - canoes, rafts, shunkus, sloops, and barges. In 1855, steamboats appeared on the creek. The first was believed to be the "Wave", then came the "Barclay", which was built in Lumberton and made her last trip in 1870. Both of these boats were side-wheelers. The "Minerva" was a tugboat that also made regular trips to Philadelphia carrying all sorts of cargo from farm produce to ironware.¹

¹ <http://www.lumbertontwp.com/Community/OurHistory/tabid/130/Default.aspx>

9.18.2.4 Governing Body Format

The Township of Lumberton is governed by the Township form of Government. Under the current township government laws, the township committee remains the backbone of the municipality's government. Voters elect, at-large, the township committee comprising three members. The elections are partisan and the committee members serve staggered three-year terms. The township committee elects the mayor for a one-year term. The mayor serves as chair of the township committee and has powers vested in the mayor's office by general law. In addition to the elected chair, the Township of Lumberton has a Deputy Mayor to serve within the Committee.

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.

9.18.2.5 Growth/Development Trends

The Township of Lumberton 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

9.18.3 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	Evacuation of the downtown area and firehouse. Large Debris clean up and public works expenditure. Loss of equipment at the firehouse and rerouting of major roadways. Protective measures deployed and residences pumped out. Numerous residences affected by storm damage.
Winter Storm	DR-1873	Yes	December 19- 20, 2009	Record snowfall creating threats to schools, medical facilities resulting in 283+ hours of snow removal and emergency counter actions for police, public works.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Winter Storm	DR-1889	Yes	February 5-6, 2010	Snowfall disrupted transportation and public safety systems limiting passage to medical facilities.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	Storm preparation and warnings preparedness and expenditure of sandbags. Removal of firehouse equipment to higher ground
Winter Storm	DR-1954	Yes	December 26-27, 2010	Early Snow storm disrupted all major routes and left passage to medical facilities impassable. Large man hours for snow removal and patrol work.
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	Relocation of fire equipment to higher ground, power outage causing relocation of some residents and displacement volunteer of elderly to family's homes.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	Relocation of fire equipment and large expenditure for debris. Left schools with out power for several days as well as approximately 50 residences with no power for over a week period.

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.

9.18.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$30,554,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$2,296,362 500-Year MRP: \$15,479,326 Annualized Loss: \$180,814	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$9,266,540 5% of GBS: \$46,332,700	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$454,613,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$541,886 2,500-Year MRP: \$12,322,765 Annualized Loss: \$11,165	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.

9.18.5 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 Lumberton indicated that the municipality has moderate planning, regulatory, administrative, technical, and fiscal capability; moderate community resiliency; and a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.18.5.1 Legal and Regulatory Capability

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

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			Twp Construction	+		Under review
2) Zoning Ordinance	X	1977			Twp/ Construction	+		
3) Subdivision Ordinance	X	1977			Zoning	+		
4) NFIP Flood Damage Prevention Ordinance	X	1983			Zoning	+		
4a) Cumulative Substantial Damages	X	2007			Twp Construction/ OEM	+		Currently working on elevations/ acquisitions
4b) Freeboard	N/A							
5) Growth Management	X	1977			Land Use Development Board	+		
6) Floodplain Management / Basin Plan	X	1983				+		
7) Stormwater Management Plan/Ordinance	X	2004				+		
8) Comprehensive Plan / Master Plan/ General Plan	X	2010				+		Reviewed every 5 years

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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	2010			Land Use Development Board	+		
10) Site Plan Review Requirements	X	2010			Land Use Development Board			
11) Open Space Plan	X	2010			Land Use Development Board			
12) Stream Corridor Management Plan	N/A							
13) Watershed Management or Protection Plan	X				Land Use Development Board			
14) Economic Development Plan	X				CFO and Planning			
15) Comprehensive Emergency Management Plan	N/A							
16) Emergency Response Plan	X	2012			OEM			
17) Post Disaster Recovery Plan	N/A							
18) Post Disaster Recovery Ordinance	N/A							
19) Real Estate Disclosure Requirement	N/A							
20) Other								None

9.18.5.2 Administrative and Technical Capability

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

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
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Township Engineer, Penoni Associates
3) Planners or engineers with an understanding of natural hazards	Y	Township Engineer and consultant
4) NFIP Floodplain Administrator	Y	Township, Building Code Official
5) Surveyor(s)	Y	Available Professional Service
6) Personnel skilled or trained in GIS applications	Y	County GIS
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Police, Office of Emergency Management
9) Grant Writer(s)	Y	Assigned various departments to include police, OEM and clerk
10) Staff with expertise or training in benefit/cost analysis	Y	Township has a CFO/OEM to receive training on new electronic system from state

9.18.5.3 Fiscal Capability

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

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	No
10) State mitigation grant programs	Yes
11) Other	Yes (FEMA and Acquisition- Green Acres)

9.18.5.4 Community Classifications

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

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

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Lumberton'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/>

9.18.5 MITIGATION STRATEGY

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

9.18.5.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.18.7. 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	
Develop a countywide gauging and warning system for riverine flooding. Lumberton should have a tide gage to monitor upstream release of water prior to and during heavy storms.		X				Have approached numerous entities however have not yet received a gauge. Explored several different types and approaches. Fiscal and personnel issues
Conduct a routine stream maintenance program. If county resources are used to remove the large number of current stream obstructions Lumberton Township can use DPW for routine maintenance.			X			Budget and personnel issues. Continuous provided they fall within regulations and guidelines by DEP and other entities.
In consultation with NJFFS and local Forest Fire wardens, review local EOPs for possible wildfire components regarding Fire-rescue, Alert Warning Communications and Evacuation	X					Budget and personnel issues
Mitigation for roads that provide key fire access.	X					Budget and personnel issues
Develop a countywide gauging and warning system for riverine flooding. The county should develop a system to control the release of water from the 83 dams upstream of the tidal South Branch of the Rancocas Creek.	X					Budget and personnel issues.
In addition to a routine stream maintenance program the stream bed channel is full of sediment that has reduced its capacity		X	X			Continuous and progress is dependent on funding

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Existing Mitigation Action	Status					Action Update Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	
to purge floodwater. A majority of the sediment is a result of the July 2004 flood caused by the collapse of upstream dams. The channel needs to be restored to its pre-flood depth.						
Identify, document and explore mitigation opportunities for repetitively flooded properties. Acquire, elevate or flood-proof these properties.	X		X			Dependent upon funding and personnel

9.18.5.2 Hazard Vulnerabilities Identified

In the Township of Lumberton, an estimated 911 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 15% is located within the 1% annual chance flood area. A total of \$132,384,000 (8.8%) 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 Lumberton has approximately 94 NFIP policies, 68 of which are located within the 1% annual chance flood area. FEMA has identified 32 Repetitive Loss (RL) property, including 2 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)
Lumberton (T)	94	141	\$6,227,869	32	2	68	68	26

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⁾
Lumberton Fire Co #1	Lumberton (T)	Fire		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.

9.18.7 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
LT-1	Relocation of current Firehouse	Yes	Flood	1-2 3-1 3-2	Lumberton OEM, Committee, Lumberton Fire Co Support: Co OEM	High	High	Grants/Federal/FEMA/State	Short Term	High	PP
LT-2	Acquisition of a Tidal Gauge/Early Warning Device	Yes	Flood	1-1 4-1	Lumberton OEM Support: Co OEM	High	Med	Grants/Local/Federal	Short Term	High	PR
LT-3	Debris removal of the Rancocas Creek and clean out of sediment from the creek as the result of 2007, 2007 and 2011 flood occurrences.	Yes	Flood	2-1	Lumberton OEM, Support: Co OEM, ARMY Corp, NJDEP	High	High	Grants Federal/local	Long Term	High	PR/NR
LT-4	Elevation of properties along the Rancocas Creek and Acquisition of residences with substantial damage/repetitive claims.	Yes	Flood	1-1 1-5 2-1 2-2	Lumberton OEM Support: Co OEM, NJ OEM, FEMA, NJDEP	High	High	Federal, State Grants	Long Term	High	PP
LT-5	Education of Public and also government officials in mitigation projects and relief	Yes	Flood	5-1 5-2 5-3	Lumberton OEM	High	Low	Federal/State/Local Education Grant	Short Term	High	PE
LT-6	Improve Communication notifications system by upgrading warning devices prior to and after entry to area of the town susceptible to flooding with two marquis solar	Yes	Flood/Hazard Weather/Post Disaster Notification/Pre-alert Notification.	1-1 1-4	Lumberton OEM Support: Co OEM	High	Low	Federal Grants	Short Term	Med	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
	powered signs										
LT-7	Update Ordinances and/or zoning restrictions to control and mitigate future development in hazard areas, specifically those identified along the floodplain.	Yes	Flood	1-4 1-5	Lumberton OEM	High-Med	Low	Municipal Budget	Short Term	Med	PE
LT-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	Township and Public	On-going	Medium	PR
LT-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
LT-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
LT-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
LT-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	Medium	Low	Municipal Budget	Short Term	High	PR, ES



SECTION 9.18: TOWNSHIP OF LUMBERTON

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						
LT-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
LT-14	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
LT-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
LT-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
LT-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.

9.18.8 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)
LT-1	3	High	High	Yes	Yes	No	High
LT-2	2	High	High	Yes	Yes	No	High
LT-3	1	High	High	Yes	Yes	No	High
LT-4	4	High	High	Yes	Yes	Y	High
LT-5	3	High	Low	Yes	No	Yes/No	High
LT-6	2	High	Low	Yes	Yes	No	Medium
LT-7	2	High-Medium	Low	Yes	No	Yes	Medium
LT-8	7	Medium	Low	Yes	Yes	Yes	Medium
LT-9	3	Medium	Medium	Yes	Yes	No	High
LT-10	1	Medium	Medium	Yes	Yes	Yes	Medium
LT-11	3	Medium	Medium	Yes	Yes	Yes	Medium
LT-12	1	Medium	Low	Yes	Yes	Yes	High
LT-13	1	High	Low – High	Yes	Yes	No	High
LT-14	2	Medium	Medium	Yes	Yes	Yes	Medium
LT-15	3	Medium	Low	Yes	Yes	Yes	Medium
LT-16	3	Medium	Low	Yes	Yes	Yes	High
LT-17	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.18.8.1 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.

9.18.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.18.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Lumberton 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 Lumberton has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.18-1: Lumberton Flood Exposure Map

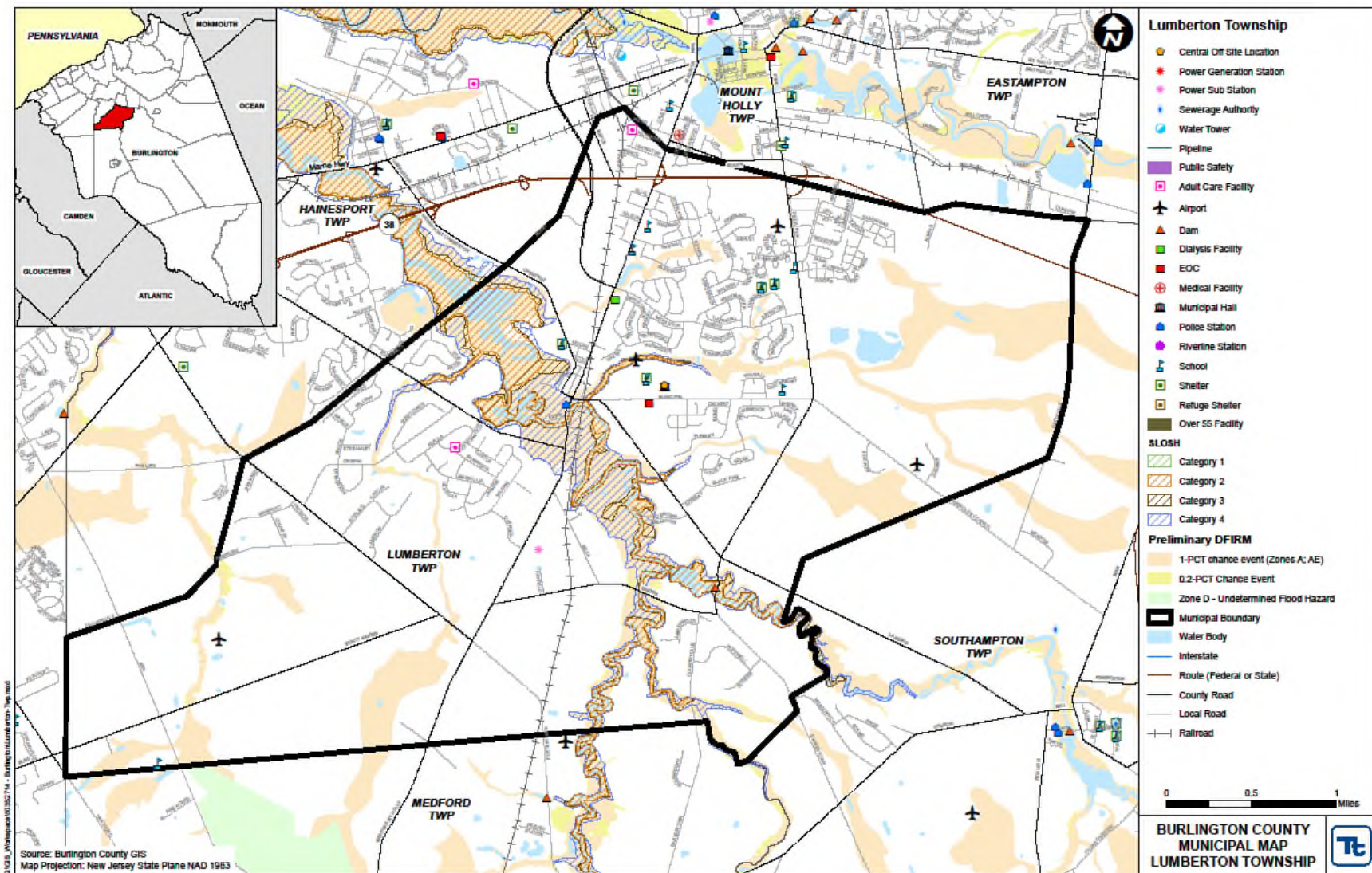
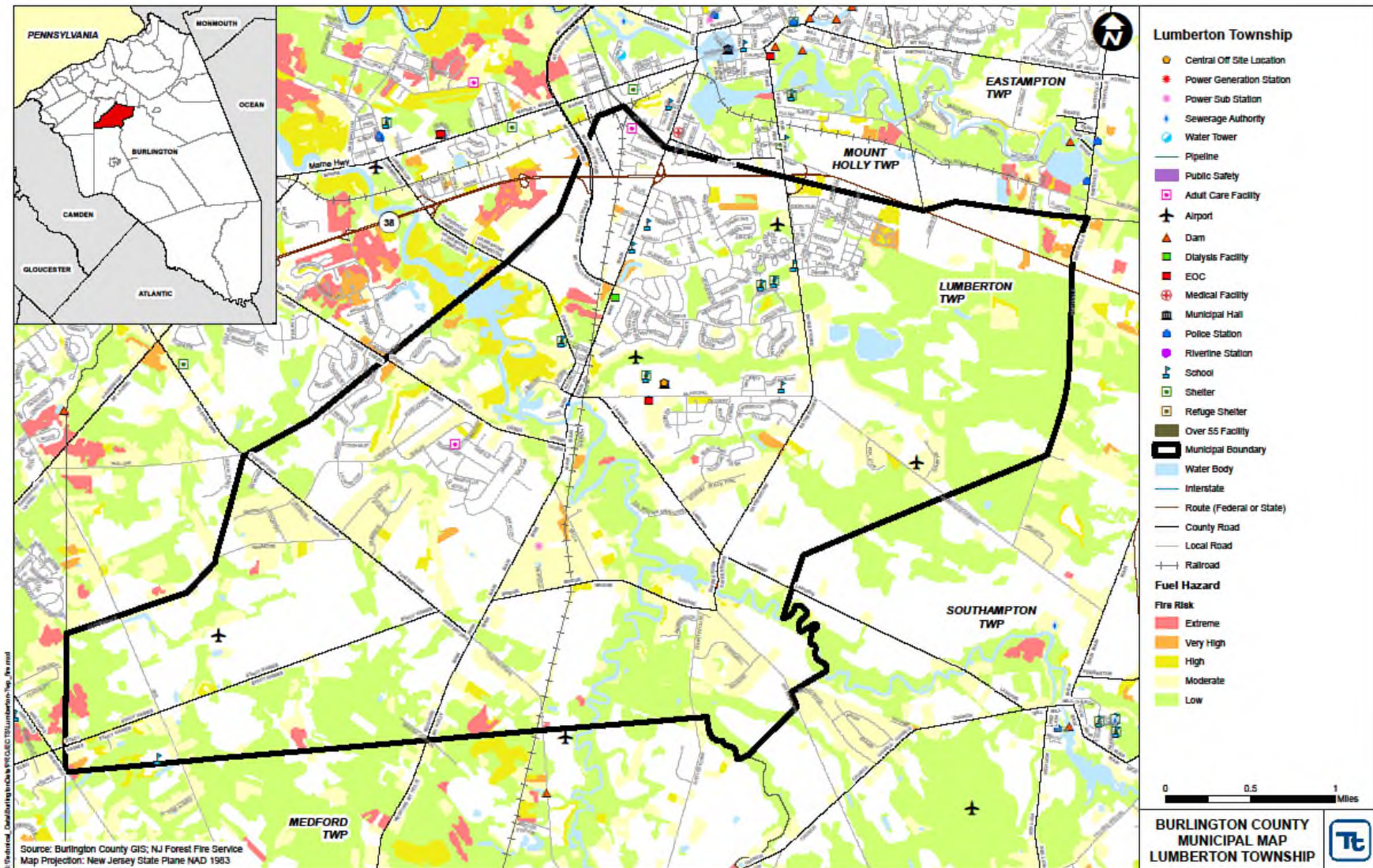


Figure 9.18-2: Lumberton Wildfire Fuel Exposure



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

It is the intention of the Township of Lumberton 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

9.18.12 ADDITIONAL COMMENTS

The main priority of Lumberton Township is to move the firehouse within a diligent time and possibly obtain funds under some type of grant. The firehouse is an essential part of the township's ability to respond to emergency situations within the township on all mitigated levels. During past events in the township apparatus have to be moved to the township building lot which does not protect the apparatus or equipment from the elements of weather the township may endure. It is the desire of the township to find a grant applicable to our needs for this use.

9.19 Township of Mansfield

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

9.19.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Douglas J. Borgstrom Title: Emergency Management Coordinator Address: 3135 Roue 206, Suite 4, Columbus, NJ 08022 Phone Number: (609) 298-5325 Ext. 102 Cell: (609) 209-8850 Fax Number: (609)298-8429 E-mail Address: firerprevention@mansfieldtwp-nj.com	Name: Sean Gable Address: 3135 Route 206, Columbus NJ 08022 Phone Number: 609-298-0542 Fax Number: 609-352-9567 E-mail Address

9.19.2 PROFILE

9.19.2.1 Population

The population of the Township of Mansfield is estimated to be 8,544, based on information gathered during the 2010 U.S. Census.

9.19.2.2 Location

Mansfield Township is located in the northeast part of Burlington County and is bounded north and northeast by Bordentown Township, northeast by Chesterfield Township, south by Springfield Township and southwest by Florence Township. In all portions there are good roads and accessibility to railroads, shipping and airports affording easy and direct communication with the surrounding centers of population. Its soil is generally sandy loam and it is watered by Bacon's Creek, Assicunk Creek, Kinkora Creek and Craft's Creek.¹

9.19.2.3 Brief History

Mansfield Township, established as a constabulary in 1688, was incorporated in 1798. The early pioneers were mostly land-owners and men of wealth and standing in England. Some of them became prominent in affairs of the township, county and state. They cleared the land for roads and dwellings, established businesses and transportation facilities, founded schools and churches, and fought for the government which we enjoy today. There are still residents in this generation who bear the name of these sturdy and resourceful people.

Sources of income have changed from predominate farming and trades in local areas to earning an income in the manufacturing centers nearby.²

¹ <http://mansfieldburlington.com/about.php>

² <http://mansfieldburlington.com/about.php>

9.19.2.4 Governing Body Format

The Township of Mansfield is governed by the Township form. The governing body consists of an elected five-person committee, each serving alternating three year terms. The mayor is designated to the one of senior term. They hire those who work in the administration, protection and financial departments.³

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.”⁴

9.19.2.5 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 9.19.10) 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
Renaissance at Mansfield Crossing	RES.	346	Petticoat Bridge Rd.	Block 42, Lots 1 and 1.02	N/A	Final subdivision approval, no construction
Project Freedom	RES.	60	Petticoat Bridge Rd.	Block 42.40, Lot 89	N/A	Final site Plan approval, no construction
Margolis	warehouse	4	Florence-Columbus Rd.	Block 47.01, Lots 3.02, 9.01, 9.02, 11 and 12	N/A	Prelim. Site Plan approval
Bright View Farm	RES.	7	298 Georgetown Rd.	Block 13, Lots 3.03 and 3.04	N/A	Final subdivision approval, no construction
Rockwell	COM.	1	14 Sheffield Dr.	Block 33.04, Lots 9.01 and 9.23	N/A	Final site plan approval, no construction
Celestial Church	Church And RES.	3	Columbus-Hedding Rd.	Lots 6.05 and 6.06	N/A	Final site and subdivision approval, no construction

³ <http://mansfieldburlington.com/about.php>

⁴ 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
Promenade at Mansfield	COM.	8	U.S. Route 206	Block 3, Lots 5.01 & 10.01; Block 4, Lots 6.01 & 7	N/A	Pending Plan. Bd. approval
Columbus receiving area	RES.	480	Petticoat Bridge Rd.	numerous	N/A	Planning only, TDR receiving area

9.19.3 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 experienced numerous road closures and power outages as a direct result of the event.
Snowstorm	DR-1889	Yes	February 5-6, 2010	The Township experienced numerous road closures and power outages as a direct 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 numerous road closures and power outages as a direct result of the event.
Tropical Storm/Hurricane Irene	DR-4021 / EM-3332	Yes	August 26 - September 5, 2011	The Township experienced numerous road closures and power outages as a direct result of the event.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	The Township experienced numerous road closures and power outages as a direct result of the event.

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.

9.19.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$47,983,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,388,861 500-Year MRP: \$15,443,283 Annualized Loss: \$212,326	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$10,539,480 5% of GBS: \$52,697,400	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$1,763,142,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$692,031 2,500-Year MRP: \$18,467,937 Annualized Loss: \$17,213	Rare	6	Low
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.

9.19.5 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 Mansfield indicated that the municipality has high planning and regulatory capabilities; moderate administrative and technical capabilities; a limited fiscal capability; and a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.19.5.1 Legal and Regulatory Capability

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

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				Construction Official	+		State Code
2) Zoning Ordinance	X	12/12/2012	X	Chapter 65	Zoning Officer	+		To be revised to incorporate the proposed TDR program
3) Subdivision Ordinance	X			Chapter 50	Planning Board	+		
4) NFIP Flood Damage Prevention Ordinance	X	4/11/1991		Chapter 22	Construction Official	+		
4a) Cumulative Substantial Damages	N/A							
4b) Freeboard	N/A							
5) Growth Management			X		Planning Board	+		Transfer of Development Rights Program
6) Floodplain Management / Basin Plan	N/A							
7) Stormwater Management Plan/Ordinance	X	12/10/2008		Chapter 48	Plan. Bd. And Zoning Bd.	+		
8) Comprehensive Plan / Master Plan/ General Plan	X	1/23/2006	X		Planning Board	+		To be revised to incorporate the TDR program
9) Capital Improvements Plan	N/A							
10) Site Plan Review Requirements	X	8/13/1992		Chapter 44A	Plan. Bd. And Zoning Bd.			
11) Open Space Plan	X	8/7/2001			Planning			Part of the Master Plan

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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					
					Board			
12) Stream Corridor Management Plan	X	2/22/2012		Chapter 63A	Plan. Bd., Zoning Bd. And Construction Official	+		Water Resource Buffer Conservation Zones
13) Watershed Management or Protection Plan	N/A							
14) Economic Development Plan	N/A							
15) Comprehensive Emergency Management Plan	x	11/13/2008	x		EOM	+	+	Presently under review
16) Emergency Response Plan	x	11/13/2008			EOM	+		
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

9.19.5.2 Administrative and Technical Capability

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

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 Boards – Consultants retained by Township
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Construction Official and Township Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Planning and Zoning Boards – Consultants retained as required
4) NFIP Floodplain Administrator	N	
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	N	
9) Grant Writer(s)	N	
10) Staff with expertise or training in benefit/cost analysis	N	

9.19.5.3 Fiscal Capability

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

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	Don't Know
4) User fees for water, sewer, gas or electric service	No
5) Impact fees for homebuyers or developers of new development/homes	Don't Know
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Don't Know
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	Don't Know
11) Other	Don't Know

9.19.5.4 Community Classifications

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

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 Mansfield'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/>

9.19.6 MITIGATION STRATEGY

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

9.19.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9. 19.7. 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		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 on-going. Staffing and budget cuts have hampered identification of properties and speaking with homeowners.

9.19.6.2 Hazard Vulnerabilities Identified

In the Township of Mansfield, an estimated 110 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 \$37,575,000 (1.9%) 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 Mansfield has a total of 25 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 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)
Mansfield (T)	25	1	\$4,060	0	0	2	2	23

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.

9.19.7 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
MF-1	Secure and maintain public fire protection water for municipal fire station	Existing	All Hazards	1-1 3-1	Municipality OEM, Fire Dept.	High	High	Federal/ local	Short Term	High	PR
MF-2	Secure Standby generators for Schools and Community centers	Existing	All Hazards	1-1 1-5	Municipality OEM	High	High	Federal grants, municipal school budgets	Short Term	High	ES
MF-3	Conduct outreach for community for hazard/disaster preparedness	N/A	All Hazards	5-1 5-2 5-3	Municipality OEM	Medium	Low	Federal	Short Term	High	PE
MF-4	Acquire small inflatable boat for rescue purposes/mitigation planning	N/A	Flooding	1-1 1-5	Municipality OEM, Fire Dept.	High	Medium	Federal/ local	Short Term	High	ES
MF-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	Low	Twp./Public	On-going	Medium	PR
MF-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
MF-7	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

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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
MF-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
MF-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
MF-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
MF-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	Medium	PR
MF-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
MF-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
MF-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	Ongoing	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.

9.19.8 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)
MF-1	2	High	High	Yes	Yes	No	high
MF-2	2	High	High	Yes	Yes	No	High
MF-3	3	Medium	Low	Yes	Yes	No	high
MF-4	2	High	Medium	Yes	Yes	No	high
MF-5	7	Medium	Low	Yes	Yes	Yes	Medium
MF-6	3	Medium	Medium	Yes	Yes	No	High
MF-7	1	Medium	Medium	Yes	Yes	Yes	Medium
MF-8	3	Medium	Medium	Yes	Yes	Yes	Medium
MF-9	1	Medium	Low	Yes	Yes	Yes	High
MF-10	1	High	Low – High	Yes	Yes	No	High
MF-11	2	Medium	Medium	Yes	Yes	Yes	Medium
MF-12	3	Medium	Low	Yes	Yes	Yes	Medium
MF-13	3	Medium	Low	Yes	Yes	Yes	High
MF-14	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.19.8.1 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.

9.19.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.19.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Mansfield 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 Mansfield has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.19-1: Mansfield Flood Exposure Map

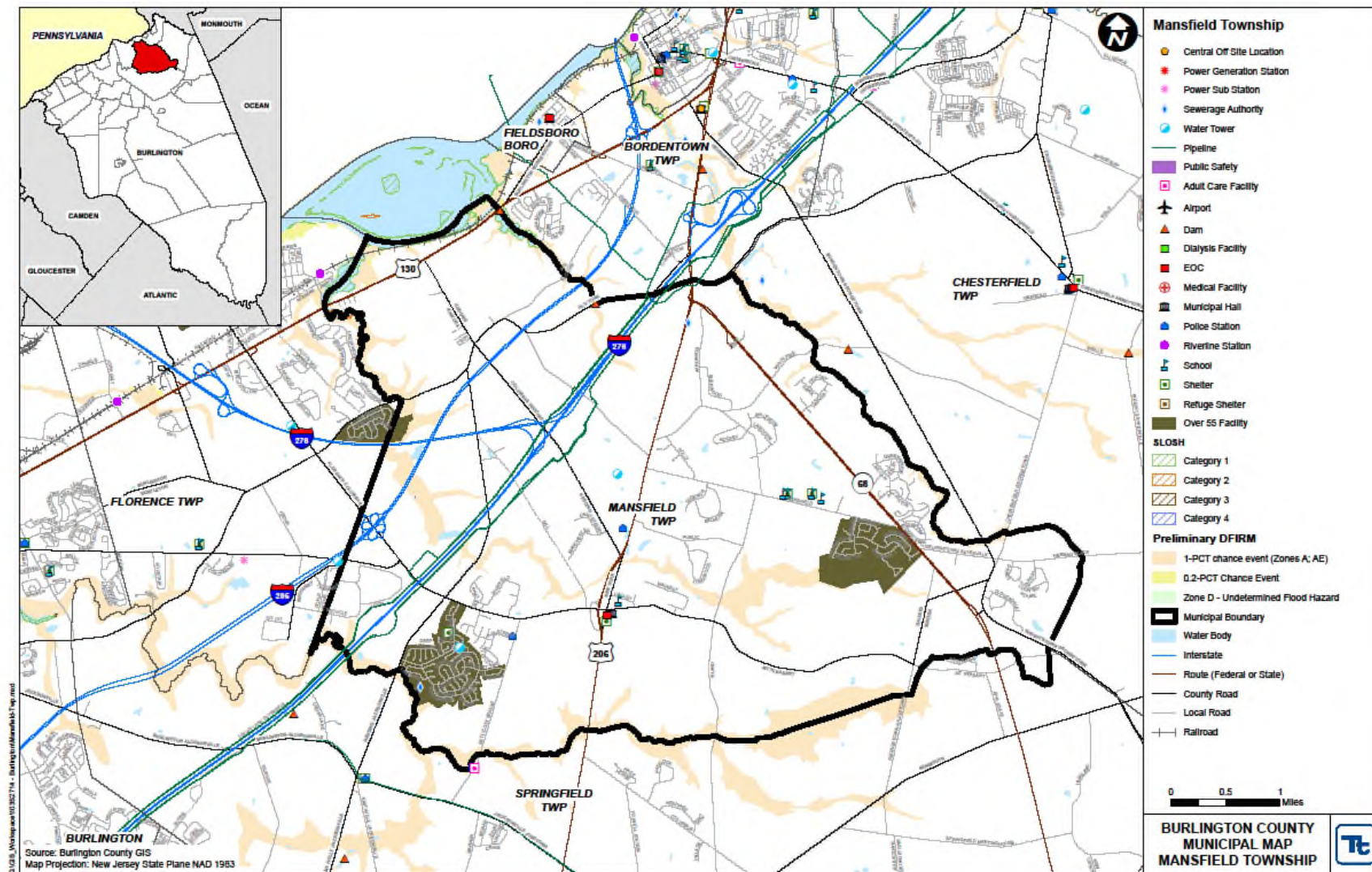
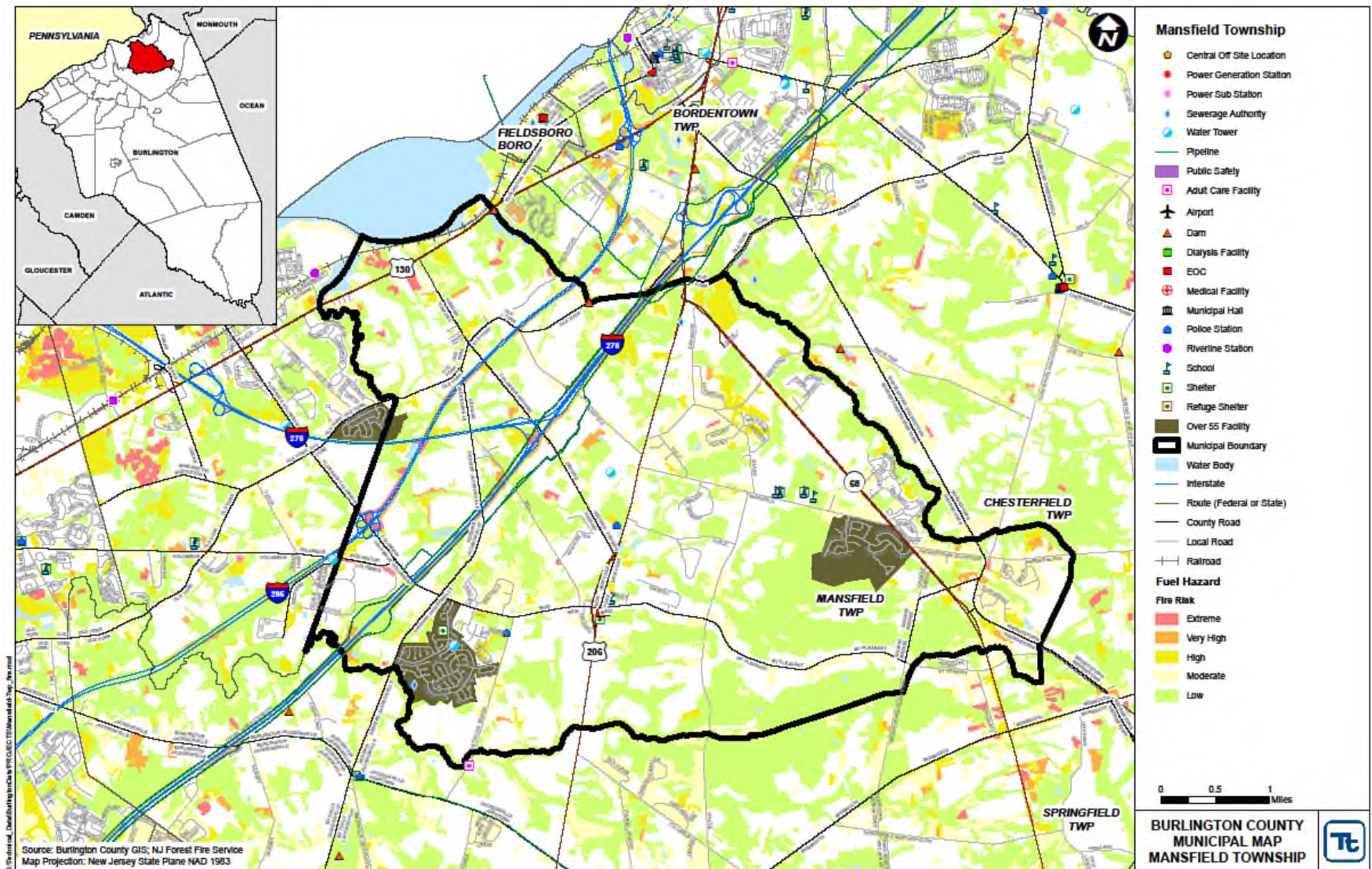


Figure 9.19-2: Mansfield Wildfire Fuel Exposure



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

It is the intention of Township of Mansfield 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.		
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

9.19.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.20 Township of Maple Shade

This section presents the jurisdictional annex for the Township of Maple Shade.

9.20.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Jack Layne Title: Township Manager Address: 200 Stile Avenue, Maple Shade, NJ 08052 Phone Number: (856) 779-9610 ext 161 Cell Phone: (609) 744-3579 Fax Number: (856) 779-2524 E-mail Address: jlayne@mapleshade.com	Name: Rosemary Flaherty Title: Community Development Director/ Planning & Zoning Officer Address: 200 Stile Avenue, Maple Shade, NJ 08052 Phone Number: (856) 779-9610 ext 151 Cell Phone: (609) 352-3966 Fax Number: (856) 779-2524 E-mail Address: roeflaherty@mapleshade.com

9.20.2 PROFILE

9.20.2.1 Population

The population of the Township of Maple Shade is estimated to be 19,131, based on information gathered during the 2010 U.S. Census.

9.20.2.2 Location

Maple Shade is located in the north-western portion of Burlington County along the Pennsauken Creek. The Township is bordered by Cinnaminson to the north, Moorestown to the east, and Mount Laurel to the south. To the west, Maple shade is bordered by Cherry Hill and Pennsauken in Camden County. According to the U.S. Census Bureau, Maple Shade encompasses 3.8 square miles.

9.20.2.3 Brief History

Maple Shade Township was first settled by the Roberts family in 1682 and developed in the early years, before the independence of the colonies, as primarily agricultural. For its first one hundred years, only Kings Highway served the area, providing poor travel, and residents chose travel by boat rather than overland as a result, until 1794 when the road that was to be Main Street was constructed to connect Kings Highway with the Cooper River ferry. Afterwards, new settlers and the families of the original settlers encouraged the division and sharing of the large plantations into smaller holdings, still agricultural in nature.

As in many settlements in the country, the coming of the railroad right-of-way purchased in 1864 and placed in operation in 1867 - brought identity to the area in the form of a station and a rail stop. The railroad also changed the complexion of the community, giving it the potential to have single family residents commuting by rail to employment outside of the Township.

As the population grew, so did the community. With the establishment of the community came the demand for public services which, in turn, required the creation of provisions to govern the methods of offering public service, the types of service to be offered to the community, and their future maintenance.

The community was known as Chester Township, and existed essentially as a neighborhood of Moorestown Township. In 1922, the residents of Chester Township voted to separate from Moorestown, electing a Township Committee. The first Municipal Building on Main Street was completed in 1927, and in it was placed the first public library in 1930. In 1945, the community chose to become Maple Shade Township.¹

9.20.2.4 Governing Body Format

In 1975, Township chose by referendum to adopt the Council-Manager (Faulkner Act) form of government under which the government presently operates. Under the Council-Manager 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.

9.20.2.5 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 9.20.10) 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
Super Wawa	Commercial	1	Rt. 38 and Lenola Rd.	172/1.03	None	Pending
Elite Acorn	Commercial	1	Rt. 73 & Rt. 38	189.01/1/01	None	Pending

¹ <http://www.mapleshade.com/About.aspx>

9.20.3 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 an unknown number of power outages as a result of this event. EMS, Police and Public Works worked overtime to ensure continuity of services and to re-establish services where needed. The Township experienced approximately \$1.1K in damages as a result of this event.
Fire	FM-2695	Yes	May 15-19, 2007	None
Winter Storm	DR-1873	Yes	December 19-2009	Township employees worked overtime to remove snow and materials to ensure adequate continuity of services. The Township requested nearly \$23K in Public Assistance as a result of this event.
Winter Storm	DR-1889	Yes	February 5-6, 2010	Township employees worked overtime to remove snow and materials to ensure adequate continuity of services. The Township requested nearly \$21K in Public Assistance 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	None
Tropical Storm/Hurricane Irene	DR-4021/EM-3332	Yes	August 26-September 5, 2011	The Township required sheltering to protect residents from the effects of the storm. In addition, the Township experiences overnight road closures. The Township experienced approximately \$33K in damages as a result of this event.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	The Township required evacuation and sheltering to protect residents from the effects of the storm. In addition, the Township experiences road closures and required cleanup and debris removal. The Township experienced approximately \$104K in damages as a result of this event.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

N/A = Not applicable

PA = Public Assistance is eligible for the declaration.

9.20.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$12,046,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$4,423,676 500-Year MRP: \$20,254,781 Annualized Loss: \$212,265	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$14,556,900 5% of GBS: \$72,784,500	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk \$542,863,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$891,009 2,500-Year MRP: \$20,823,776 Annualized Loss: \$18,835	Rare	6	Low
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.

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

9.20.5.1 Legal and Regulatory Capability

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

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	2009		Chapter 75	Construction			
2) Zoning Ordinance	X	2001		Chapter 205	Community Development			
3) Subdivision Ordinance	X	1975		Chapter 179	Community Development			
4) NFIP Flood Damage Prevention Ordinance	X	1979		Chapter 99	Community Development			
4a) Cumulative Substantial Damages			X					
4b) Freeboard			X					
5) Growth Management			X					
6) Floodplain Management / Basin Plan	X	1987		Chapter 99	Township Engineer			
7) Stormwater Management Plan/Ordinance	X	2007		Chapter 174	Township Engineer			
8) Comprehensive Plan / Master Plan/ General Plan	X	2006			Community Development			
9) Capital Improvements Plan	X	2006			Township Engineer			
10) Site Plan Review Requirements	X	1975		Chapter 179	Community Development			
11) Open Space Plan	X	2006		Chapter 205	Township Engineer			

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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			X					
13) Watershed Management or Protection Plan	X	2007		Chapter 174	Township Engineer			
14) Economic Development Plan	X	2006		Chapter 174	Community Development			
15) Comprehensive Emergency Management Plan	X	2006			OEM			
16) Emergency Response Plan			X					
17) Post Disaster Recovery Plan			X					
18) Post Disaster Recovery Ordinance			X					
19) Real Estate Disclosure Requirement			X					
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]			X					

9.20.5.2 Administrative and Technical Capability

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

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	Township Engineer
5) Surveyor(s)	Y	Township Engineer
6) Personnel skilled or trained in GIS applications	N	
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Township Manager
9) Grant Writer(s)	N	
10) Staff with expertise or training in benefit/cost analysis	Y	CFO/Finance/Auditors

9.20.5.3 Fiscal Capability

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

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	Yes
10) State mitigation grant programs	No
11) Other	No

9.20.5.4 Community Classifications

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

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 Maple Shade'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/>

9.20.6 MITIGATION STRATEGY

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

9.20.6.1 Past Mitigation Actions/Status

The Township of Maple Shade did not participate in the 2008 Hazard Mitigation Plan. As a result, no previous mitigation actions were identified for the Township.

9.20.6.2 Hazard Vulnerabilities Identified

Township officials have identified areas along the Pennsauken Creek that are particularly vulnerable to flooding.

In the Township of Maple Shade, an estimated 464 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 \$20,928,000 (0.9 %) 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 Maple Shade has a total of 40 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)
Maple Shade (T)	40	5	\$240,619	1	0	0	8	32

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⁾
Maple Shade Rescue Service	Maple Shade (T)	Fire		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.

9.20.7 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
MS-1	Conduct further studies to identify areas prone to flooding throughout the Township and identify potential properties for elevation or acquisition	Existing	Flooding	1-1 1-3	Maple Shade Township	High	Low	Municipal Budget, HMA grants	On-going	Medium	PP/PR
MS-2	Consider 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
MS-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 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
MS-4	Improve municipal communication systems.	N/A	All Hazards	3-2	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	ES PR
MS-5	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
MS-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

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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
MS-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
MS-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
MS-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
MS-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
MS-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 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.

9.20.8 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)
MS-1	2	High	Low	Yes	Yes	Yes	Medium
MS-2	7	Medium	Low	Yes	Yes	Yes	Medium
MS-3	3	Medium	Medium	Yes	Yes	No	High
MS-4	1	Medium	Medium	Yes	Yes	Yes	Medium
MS-5	3	Medium	Medium	Yes	Yes	Yes	Medium
MS-6	1	Medium	Low	Yes	Yes	Yes	High
MS-7	1	High	Low – High	Yes	Yes	No	High
MS-8	2	Medium	Medium	Yes	Yes	Yes	Medium
MS-9	3	Medium	Low	Yes	Yes	Yes	Medium
MS-10	3	Medium	Low	Yes	Yes	Yes	High
MS-11	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

Notes:

H = High

L = Low

M = Medium

N/A = Not applicable

N = No

Y = Yes

9.20.8.1 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.

9.20.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.20.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Maple Shade 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 Maple Shade has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.20-1: Maple Shade Flood Exposure Map

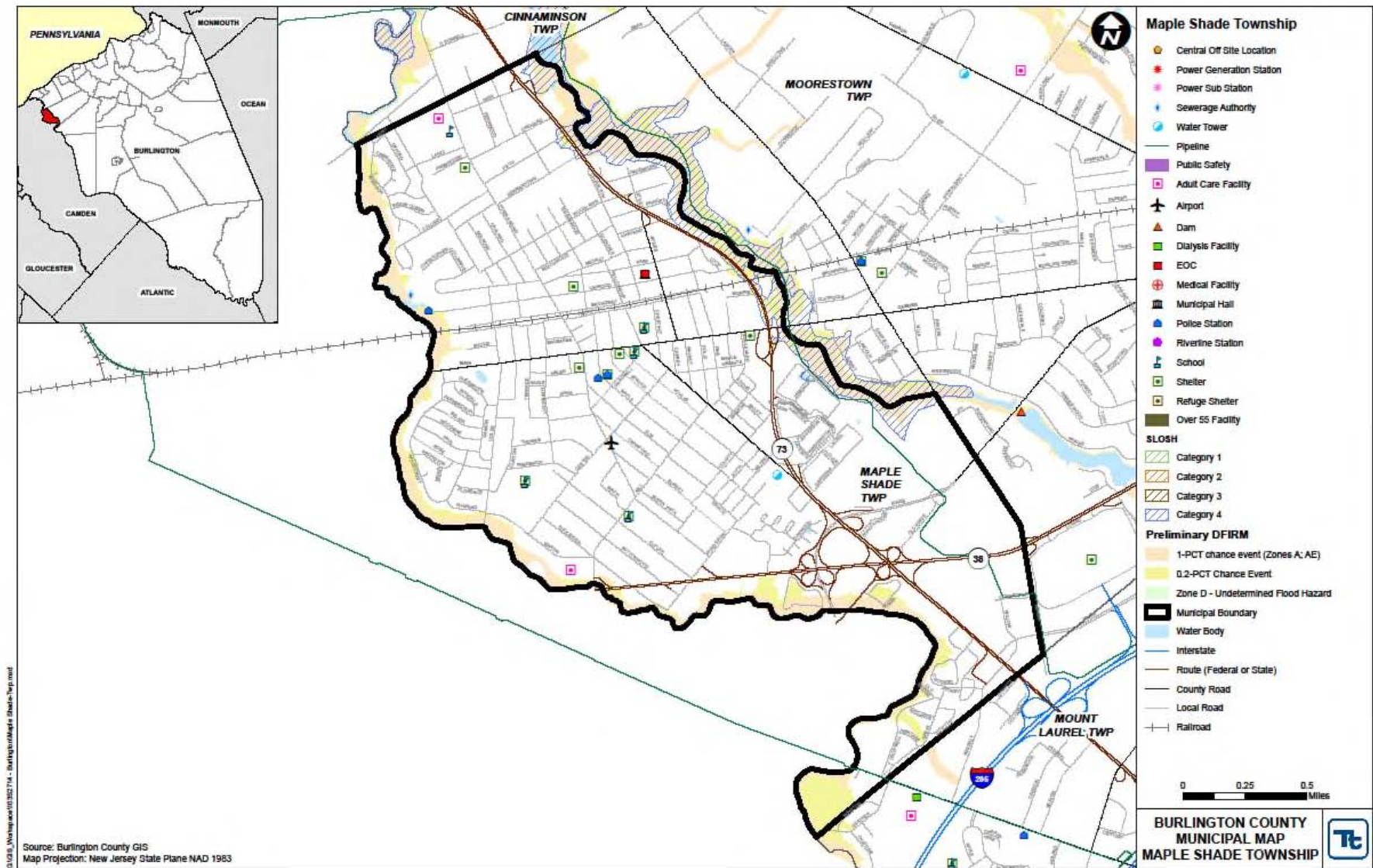
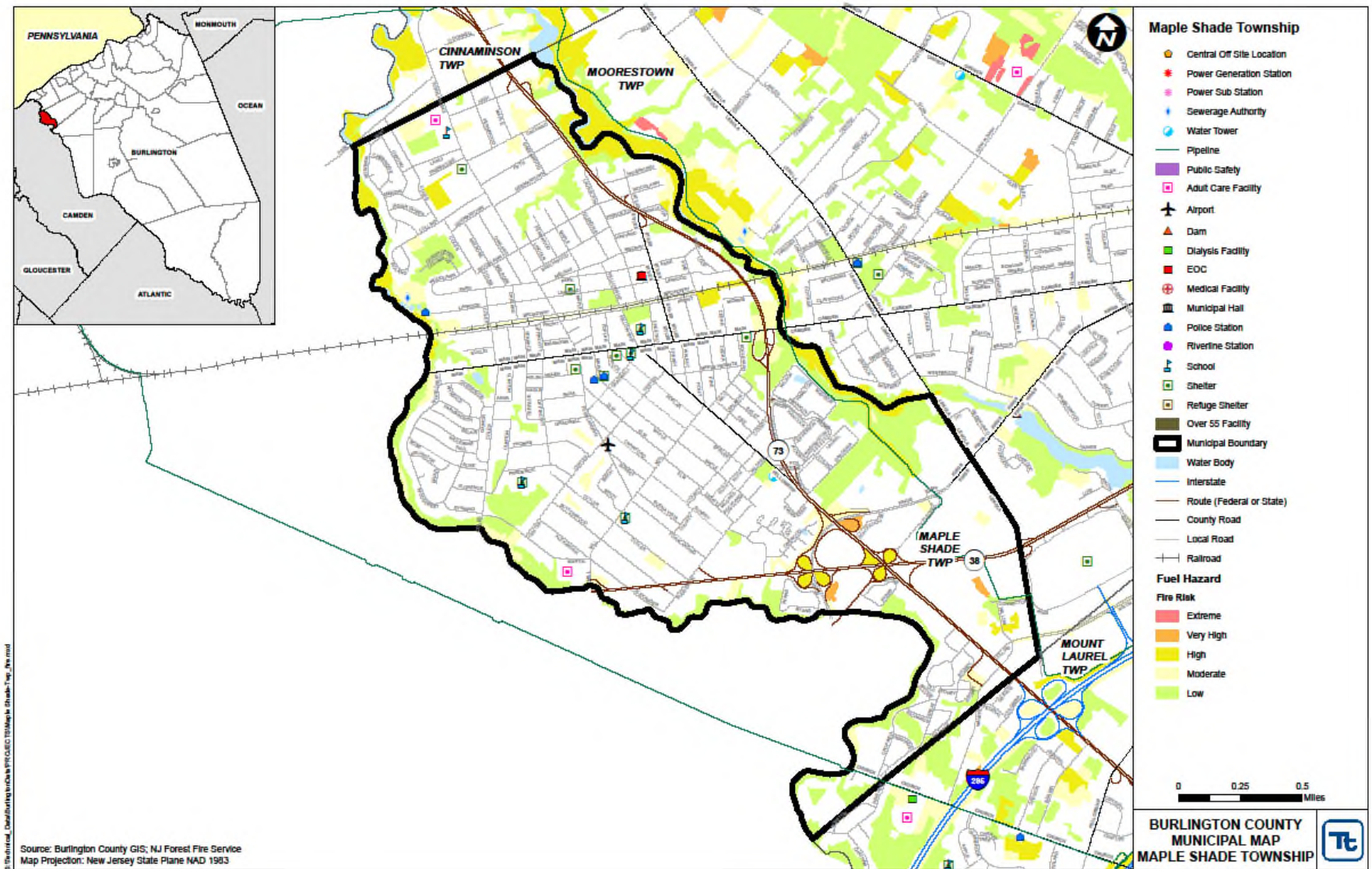


Figure 9.20-2: Maple Shade Wildfire Fuel Exposure



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

It is the intention of the Township of Maple Shade to incorporate mitigation planning as an integral component of daily municipal operations. The Township specified that mitigation planning is an integral part in their stormwater management plan and program. In addition, 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

9.20.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.21 Township of Medford

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

9.21.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Hazard Mitigation Plan Points of Contact	
Primary Point of Contact	Alternate Point of Contact
Name: Jeffrey Wagner Title: Emergency Management Coordinator Address: 91 Union St., Medford, NJ 08055 Phone Number: (609) 479-8912 Fax Number: (609) 654-5996 E-mail Address: jwagner@medfordpolice.org	Name: Robert Dovi Title: Deputy OEM Coordinator Address: 1 Firehouse Ln., Medford, NJ 08055 Phone Number: (609) 953-3291 Fax Number: (609) 654-5996 E-mail Address: rdovi@medfordfire.org

9.21.2 PROFILE

9.21.2.1 Population

The population of the Township of Medford is estimated to be 23,033, based on information gathered during the 2010 U.S. Census.

9.21.2.2 Location

The Township of Medford is located in the western portion of Burlington County. The Township is bordered by Evesham and Mount Laurel to the west, Lumberton to the north, Southampton and Tabernacle to the east, and Shamong to the south east. To the south, Medford is bordered by the Camden County Municipality of Waterford Township.

9.21.2.3 Brief History

In 1670, William Penn and others, acting for Edward Billynge, sold 900 acres of land -- what is now known as Medford Township -- to Samuel Coles. Nearly 100 years later, Medford, then known as Upper Evesham, began to resemble a village with a schoolhouse that was also used as the Friends Meeting. The Village continued to develop through the 1780's largely due to the founding of the Etna and Taunton furnaces by Charles Read. Etna furnace (Medford Lakes) went out of blast in 1773 but the grist and sawmill operated into the 20th century.

After the Revolution and into the 1800's, Upper Evesham struggled as a little village with a few houses strung along Main Street. It was Mark Reeve who called a town meeting to propose the name Medford after a visit to Medford, Massachusetts. In 1820, when the Post Office opened, the town was officially called Medford of Upper Evesham. On February 4th, 1847, Medford Township was "set apart from" Evesham by act of legislature.¹

¹ <http://www.medfordtownship.com/history.php>

9.21.2.4 Governing Body Format

The Township of Medford is governed by the Council-Manager (Faulkner Act) form of government. Under the Council-Manager form, the council is the legislative body of the municipality but also appoints the positions of Municipal Clerk, Tax Assessor as 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 is selected from the council and 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

9.21.2.5 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 9.21.10) of this annex which illustrates the hazard areas located within the Township.

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Medford Walk	Residential	29	Himmelein Rd. and Mill Street	909/1.01	Partial Zone A	Appeared at 5/2013 Planning Board Hearing and Planning Board Approval
United Medford Methodist Church	Commercial	1(Addition)	2 Hartford Rd.	908/2.02	Partial Zone AE	Planning Board Approval
Fellowship Alliance Chapel	Commercial	1	199 Church Rd.	205/3.01, 3.03,3.04 ,12,13,14 .01,14.04 ,17,18,20 .02	None	Zoning Board Approval, some projects under construction
Francis Francks	Commercial	1	176 Tuckerton Rd.	3201/30	None	Planning Board Approval
Medford Leas/Estagh	Commercial	1	1 Medford Leas Way	805/15.0 1,15.02,1 6,17.01,1 7.02,17.0 3,18,19,2 2.01,22.0 2,23	Partial Zone AE	Planning Board Approval
Village of Taunton Forge	Commercial	1	200 Tuckerton Rd.	3201/32. 01,32.02, 38	Partial Zone AE	Prelim planning approval
Come Alive Church	Commercial	1	240 Old Marlton Pike	905/4	Partial Zone A	Planning Board Approval
Ambrosia Real Estate	Commercial	1	285 Old Marlton Pike	901/1.01, 1.03,1.04	None	Planning Board Approval

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

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New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
				,1.05,1.0 6		
Medford Acres Murphy's/Ott's	Commercial	2	666 & 656 Stokes Rd.	4801.01/ 26,27,28, 36.02,39. 02	None	Planning Board Approval
Earl Stahl	Commercial	1	25 Fostertown Rd.	302/39.0 1	Partial Zone A	Portion under construction
Hartford Road Associates	Commercial	1	135 Hartford Rd.	401/16	None	Phase 1 Constructed, Phase 2 Preliminary Planning Board Approval

9.21.3 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 2007 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 2007, 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	Numerous roads were closed for approximately 2-8 weeks throughout the Township. Dam failure on Jackson Road and pipe crossing failure in multiple areas was reported by the Township. The Sewer Plant experienced electrical damage and Camp Dark Waters in addition to 23 residential homes suffered minor to moderate damage due to flooding.
Fire Management Assistance Declaration	FM-2695	Yes	May 15-29, 2007	None
Severe Wind Storm	N/A	No	July 29, 2007	The Township reported power outages in the Hoot Owl Development and multiple road closures. In addition, 8 homes were damaged by fallen trees and one home was damaged by lightning. The township was required to conduct debris removal throughout the area.
Severe Thunderstorm	N/A	No	July 31, 2009	None
Snowstorm	DR-1873	Yes	December 19-20, 2009	Record snowfall resulted in the closure or impassibility of roads throughout the Township. In addition, schools and commercial establishments were closed. The cost of activated emergency protective measures during this event was approximately \$93K.
Snowstorm	DR-1889	Yes	February 5-6, 2010	This event required the opening of a shelter to protect the life safety of residents. Record snowfall resulted in the closure or impassibility of roads throughout the Township. In addition, schools and commercial establishments were closed. Approximately 300 homes were without power. The cost of activated emergency protective measures during this event was approximately \$143K.
Severe Storms, Flooding	DR-1897	Yes	March 12-April 15, 2010	This event caused downed trees and wires in addition to flooding in areas along the southwest branch of the Rancocas Creek. The Township also experienced numerous power outages and several road closures. The cost of activated

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
				emergency protective measures during this event was approximately \$17K.
Severe Winter Storm and Snowstorm	DR-1954	Yes	December 26-27 2010	Record snowfall resulted in the closure or impassibility of roads throughout the Township. In addition, schools and commercial establishments were closed. The cost of activated emergency protective measures during this event was approximately \$112K.
Tropical Storm/Hurricane Irene	DR-4201/ EM-3332	Yes	August 26-September 5, 2011	This event required the evacuation of residents along SW Rancocas Creek and the opening of a shelter to protect the life safety of the Township population. Numerous road closures and power outages reported throughout the Township, including utility interruption at the EOC. The Dam on Shanty Dam Drive overtopped, resulting in a partial failure and several sidewalks were damaged due to uprooted trees. In addition, the dam at Cedar Run Wildlife Refuge experienced Damage. The cost of activated emergency protective measures during this event was approximately \$24K and the cost of vegetative debris removal was approximately \$193.5K.
Hurricane Sandy	DR-4086	Yes	October 26-November 8, 2012	This event required the evacuation of approximately 20 homes and the opening of a shelter to protect the life safety of residents. Numerous roads were closed and the Township experienced power outages for 2-12 days. The event caused damage to signs, fences, and buildings at Hartford Crossing Park, Bende Park, and Freedom Park. The Sewer Plant Influent Building experienced approximately \$74K in damage as a result of the power outages. 13 residential homes suffered damage from flooding and fallen trees. The cost of activated emergency protective measures during this event was approximately \$15K , the cost of vegetative debris removal was approximately \$105K, and the cost of damage to recreational facilities was approximately \$1.7K.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

IA = Individual Assistance is eligible for the declaration.

N/A = Not applicable

9.21.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

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

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: \$76,554,000	Frequent	30	Low
Severe Storm	100-Year MRP: \$1,025,309 500-Year MRP: \$7,136,110 Annualized Loss: \$68,996	Frequent	30	Medium
Severe Winter Storm	1% of GBS: \$3,614,300 5% of GBS: \$18,071,500	Frequent	33	High
Coastal Erosion	RCV in CAFRA Boundary: \$0	Rare	6	Low
Wildfire	Estimated Potential GBS Loss High to Extreme Risk: \$129,154,000	Frequent	24	Medium
Drought	Not available	Occasional	12	Low
Earthquake	500-Year MRP: \$155,390 2,500-Year MRP: \$3,614,863 Annualized Loss: \$3,035	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.

9.21.5 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 Medford indicated that the municipality has high planning, regulatory, administrative and technical capabilities; a low fiscal capability; moderate community political and community resiliency capabilities; and a moderate to very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

9.21.5.1 Legal and Regulatory Capability

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

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			N.J. Uniform Construction Code	Construction Office	0	+	
2) Zoning Ordinance	X	7/20/92		Land Development Section 701	Zoning Board	+	+	
3) Subdivision Ordinance	X	7/20/92		Land Development Section 803, 804, & 805	Planning & Zoning Boards	+	+	
4) NFIP Flood Damage Prevention Ordinance	X	7/20/92		Land Development Section 603	Construction Office, Planning & Zoning	+	+	
4a) Cumulative Substantial Damages	X	7/20/92		Land Development Section 603,B, 2,p	Planning & Zoning Boards	+	+	
4b) Freeboard	X	7/20/92		Section 603,D,3	Planning & Zoning Boards	+	+	
5) Growth Management	X	7/20/92		Section 300 of Land Development Ordinance	Planning & Zoning Boards	0	+	
6) Floodplain Management / Basin Plan	X	7/20/92		Section 603 of Land Development Ordinance	Planning & Zoning Boards	+	+	
7) Stormwater Management Plan/Ordinance	X	2010		Section 509; Ordinance 2010-32	Planning & Zoning Boards	+	+	

SECTION 9.21: TOWNSHIP OF MEDFORD

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	10/26/11		Master Plan	Planning Board	+	+	
9) Capital Improvements Plan			X		Manager's Office	0	-	There has been minimal capital improvements for the past 2 years due to budget constraints
10) Site Plan Review Requirements	X	7/20/92		Section 800 of Land Development Ordinance	Zoning & Planning Boards	+	+	
11) Open Space Plan	X			Master Plan and Green Acres Plan	Manager's Office	+	+	There is an open space tax to support acquisition and maintenance of open land
12) Stream Corridor Management Plan								None
13) Watershed Management or Protection Plan								None
14) Economic Development Plan	X	2/25/03		§5-31.2 L.O. 2003-3	Economic Development Board	0	+	
15) Comprehensive Emergency Management Plan	X	8/2008			Office of Emergency Management	+	+	Burlington County Hazard Mitigation Plan
16) Emergency Response Plan	X	6/29/09			Office of Emergency Management	+	+	Plan is currently under review and will be revised December 2013
17) Post Disaster Recovery Plan	X	6/29/09		E.O.P.	Office of Emergency Management	+	+	
18) Post Disaster Recovery Ordinance								None
19) Real Estate Disclosure Requirement	X	7/20/92		Section 300 of Land Development Ordinance	Planning & Zoning Boards	0	+	

SECTION 9.21: TOWNSHIP OF MEDFORD

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					
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	X	7/20/92		Section 514; L.O. 1992-1	Planning & Zoning Boards	+	+	Addresses defensible space around homes for wildfire protection

9.21.5.2 Administrative and Technical Capability

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

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 & Zoning Boards
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Planning & Zoning Boards, Construction Office
3) Planners or engineers with an understanding of natural hazards	Y	Planning, Zoning, Construction, Public Works, O.E.M.
4) NFIP Floodplain Administrator	Y	Planning & Zoning Boards, Construction Office
5) Surveyor(s)	N	
6) Personnel skilled or trained in GIS applications	Y	Medford Fire Division
7) Scientist familiar with natural hazards	N	
8) Emergency Manager	Y	Office of Emergency Management
9) Grant Writer(s)	Y	O.E.M., Police, Fire, Manager's Office
10) Staff with expertise or training in benefit/cost analysis	N	

9.21.5.3 Fiscal Capability

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

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	No
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	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	No

9.21.5.4 Community Classifications

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

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)		NP
Building Code Effectiveness Grading Schedule (BCEGS)		NP
Public Protection		NP
Storm Ready		7/2005
Firewise		6/2012

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

The classifications listed above relate to the Township of Medford'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/>

9.21.6 MITIGATION STRATEGY

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

9.21.6.1 Past Mitigation Actions/Status

The progress of mitigation actions outlined in the 2008 Burlington County Hazard Mitigation Plan is indicated in Section 9.21.7. 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	
Clearing of debris along the Southwest Branch of the Rancocas Creek and its tributaries	X					No funding available, DEP restrictive regulations
Create a mitigation outreach program to help residents prepare for disaster.			X			Working with CERT to distribute preparedness and mitigation information; development of website
Support and fund Community Emergency Response Team (CERT) program that includes a mitigation component.		X				CERT team formed, continuing to work on mitigation component
Reduce water use for landscaping by imposing mandatory water-use restrictions during times of water shortage.			X			The Township regularly monitors water use for landscaping during times of water shortage.
Identify and document repetitively flooded properties and take action to mitigate by upgrading storm pipe crossings, installing drainage outlets, and improving spillways.		X				LOI submitted to elevate several homes and camp facilities under HMGP
Work with NJFFS and Burlington County GIS to develop mapping of wildland urban interface areas				X		Complete 6/2012
Develop an inventory of addresses for route alerting during large scale emergencies that require public warning and information.				X		Implement Nixle alerting system as well as Global Connect Notification System (Code Red)
Initiate a public outreach program to educate homeowners on the risk of wildfires and personal property mitigation strategies.		X				Community Wildfire Protection Plan implemented in 2012, seeking additional funding for outreach
Purchase or promote NOAA weather radios for critical facilities.				X		Complete 12/2009

9.21.6.2 Hazard Vulnerabilities Identified

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

- Severe flooding often occurs at the SW branch of the Rancocas Creek. In 2004 and 2007, significant flooding caused damage to homes and public infrastructure along this area of the Creek. In addition, the Township continually monitors the local dams in effort to mitigate dam failure and associated flooding issues.
- Wildfire occurs throughout the southeastern portion of the Township. Beginning in 1933 and through the 1960s, large wildfires (>100 acres) burned frequently in the Township with at least one extremely large fire (>1000 acres) each decade. In the 1960s, 8 large wildfires burned 11,098 acres in the area
- Several severe storms affect the Township, with the most recent being Hurricanes Irene and Sandy, documented in Section 9.21.3 of this Annex.

In the Township of Medford, an estimated 1,466 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 \$373,385,000 (66.6%) 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 Medford has a total of 298 NFIP policies, 90 of which are located within the 1% annual chance flood area. FEMA has identified 17 Repetitive Loss (RL) property, including 1 Severe Repetitive Loss (SRL) property 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 (T)	298	127	\$3,197,307	17	1	90	104	194

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⁾
BURLINGTON COUNTY INSTITUTE OF TECH	Medford Township	School	X	X	6.1	32.9	480
CHAIRVILLE ELEMENTARY SCHOOL	Medford Township	School	X	X	5.6	30.2	480
CRANBERRY PINE ELEMENTARY SCHOOL	Medford Township	School	X	X	9.0	59.4	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.

9.21.7 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
MD-1	Clearing of debris along the Southwest Branch of the Rancocas Creek and its tributaries	N/A	Flood	3-1	Lead: Twp. Public Works Support: Twp. OEM, NJ DEP	High	High (\$500K)	Federal, State and County Grants, Burlington County Bridge Commission	Long	Low	NR
MD-2	Create a mitigation outreach program to help residents prepare for disaster.	N/A	All	5-1 5-3	Lead: Twp. OEM	Medium	Low (~\$500)	General Budget, EMA Grant	Continuous	High	PE
MD-3	Support and fund Community Emergency Response Team (CERT) program that includes a mitigation component.	N/A	All	1-1	Lead: Twp. OEM	Medium	Low (~\$500)	General Budget, EMA Grant	Continuous	High	ES
MD-4	Reduce water use for landscaping by imposing mandatory water-use restrictions during times of water shortage.	N/A	Drought	1-1 3-1	Lead: Twp. Utilities Dept.	Low	Low	General Budget	Continuous	Medium	NR
MD-5	Identify and document repetitively flooded properties and take action to mitigate by upgrading storm pipe crossings, installing drainage outlets, and improving spillways. Elevation, relocation, or acquisition of affected homes and properties.	Existing	Flood	1-3 3-1 4-1	Lead: Twp. OEM Support: Twp. Public Works, Twp. Planning Board, NJOEM	High	High (\$3.5M)	HMGP, Capital Funding	Long	Medium	PP
MD-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 OEM, Medford Twp. Support: Medford Twp Division of Fire, NJ Forest Fire Service	High	Low	Firewise, EMAA, local funding through operations budget	Short	High	PE

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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
MD-7	Purchase or promote NOAA weather radios for critical facilities.	Existing	Storms	1-1 4-1	Lead: Medford OEM, Medford Twp. Support: NJOEM	Medium	Medium	NOAA, State, General Budget	Short	Medium	ES
MD-8	Install a permanent 345Kw generator at the Medford Township Fire Division Station #252, located in the southeastern section of the Township	Existing	All	1-1 1-2 3-1 3-2	Lead: Twp. OEM Support: Twp. Division of Fire	High	Medium (~\$45K)	HMGP supplemented by Capital for cost share	Short	High	ES
MD-9	Raise existing wood frame dining hall structure of Camp Dark Waters so floor level is above the level indicated by flood plain in this particular area of the camp	Existing	Flood	2-2	Lead: Twp. OEM	High	High (~\$675K)	HMGP supplemented by Capital for cost share	Short	Medium	PP
MD-10	Develop and map wildfire evacuation routes throughout the southeastern section of the Township	N/A	Fire	1-1 1-4 1-5	Lead: Twp. OEM Support: Twp. Division of Fire, NJ Forest Fire Service	Medium	Low	Firewise, EMAA, local funding through operations budget	Short	Medium	ES
MD-11	Develop a Wildfire Evacuation Route Awareness Program with related signage delineating safe routes of escape from wildfires	N/A	Fire	1-1 1-4 1-5 5-1	Lead: Twp. OEM Support: Twp. Division of Fire, NJ Forest Fire Service	High	Low	Firewise, EMAA, local funding through operations budget	Short	Medium	PE
MD-12	Develop a snow response plan to ensure public safety access during extreme winter weather	N/A	Winter Storms	1-1 1-4 1-5	Lead: Twp. OEM	High	Low	Snow Trust/ Operating Budget	Short	High	ES
MD-13	Coordinate a dam safety workshop for dam owners to educate them on responsibilities and to assist in updating/revising dam emergency action plans	N/A	Flood	1-1 1-5 3-1 3-2	Lead: Medford Lakes OEM, Medford Twp. OEM Support: NJDEP	High	Low	EMAA Funding	Short	High	PR
MD-14	Evaluate benefits of participating in CRS program	Existing	All	1-1 1-5 2-1 2-2 3-1 4-1	Twp. Council; OEM; Planning	Medium	Low	Twp./Public	On-going	Medium	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
				5-1							
MD-15	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
MD-16	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
MD-17	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
MD-18	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
MD-19	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
MD-20	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
MD-21	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
MD-22	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 OEM	Medium	Low	Municipal Budget	Short	H	PR
MD-23	Address dangerous trees threatening people and	NA	Severe Storm,	1-5 4-1	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	PP

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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
	property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.		Severe Winter Storm								

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.

9.21.8 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)
MD-1	1	High	High	Yes	Yes	No	Low
MD-2	2	Medium	Low	Yes	Yes	No	High
MD-3	1	Medium	Low	Yes	Yes	No	High
MD-4	2	Low	Low	Yes	Yes	Yes	Medium
MD-5	3	High	High	Yes	Yes	No	Medium
MD-6	3	High	Low	Yes	Yes	No	High
MD-7	2	Medium	Medium	Yes	Yes	No	Medium
MD-8	4	High	Medium	Yes	Yes	No	High
MD-9	1	High	High	Yes	Yes	No	Medium
MD-10	3	Medium	Low	Yes	Yes	No	Medium
MD-11	4	High	Low	Yes	Yes	No	Medium
MD-12	3	High	Low	Yes	No	Yes	High
MD-13	4	High	Low	Yes	Yes	No	High
MD-14	7	Medium	Low	Yes	Yes	Yes	Medium
MD-15	3	Medium	Medium	Yes	Yes	No	High
MD-16	1	Medium	Medium	Yes	Yes	Yes	Medium
MD-17	3	Medium	Medium	Yes	Yes	Yes	Medium
MD-18	1	Medium	Low	Yes	Yes	Yes	High
MD-19	1	High	Low – High	Yes	Yes	No	High
MD-20	2	Medium	Medium	Yes	Yes	Yes	Medium
MD-21	3	Medium	Low	Yes	Yes	Yes	Medium
MD-22	3	Medium	Low	Yes	Yes	Yes	High
MD-23	2	Medium	Low/Medium	Yes	Yes	Yes	Medium

9.21.8.1 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.

9.21.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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

9.21.10 HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map illustrating the probable areas impacted within the Township of Medford 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 Medford has significant exposure. The planning area maps are provided in the hazard profiles within Section 5.4, Volume I of this plan.

Figure 9.21-1: Medford Flood Exposure Map

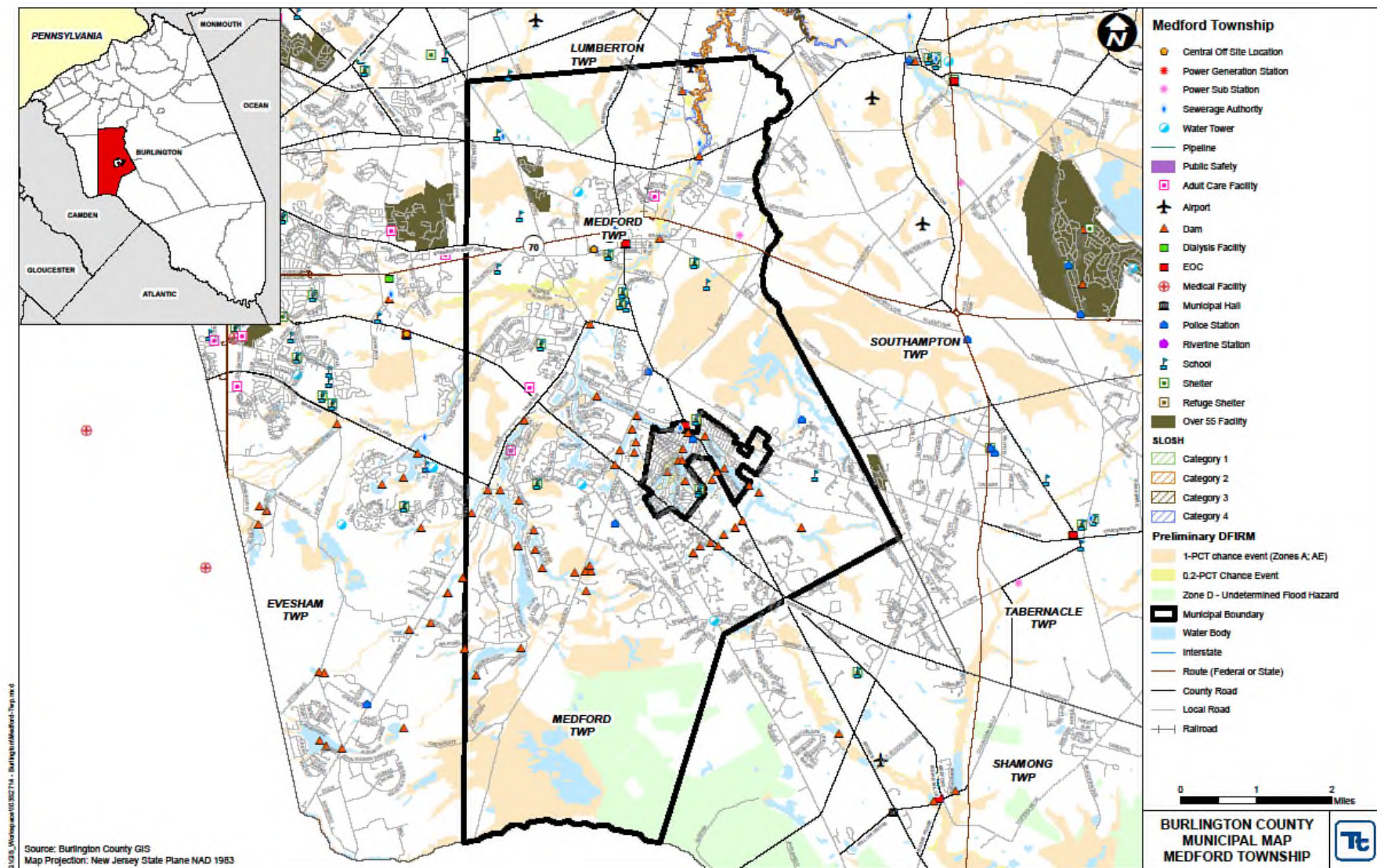
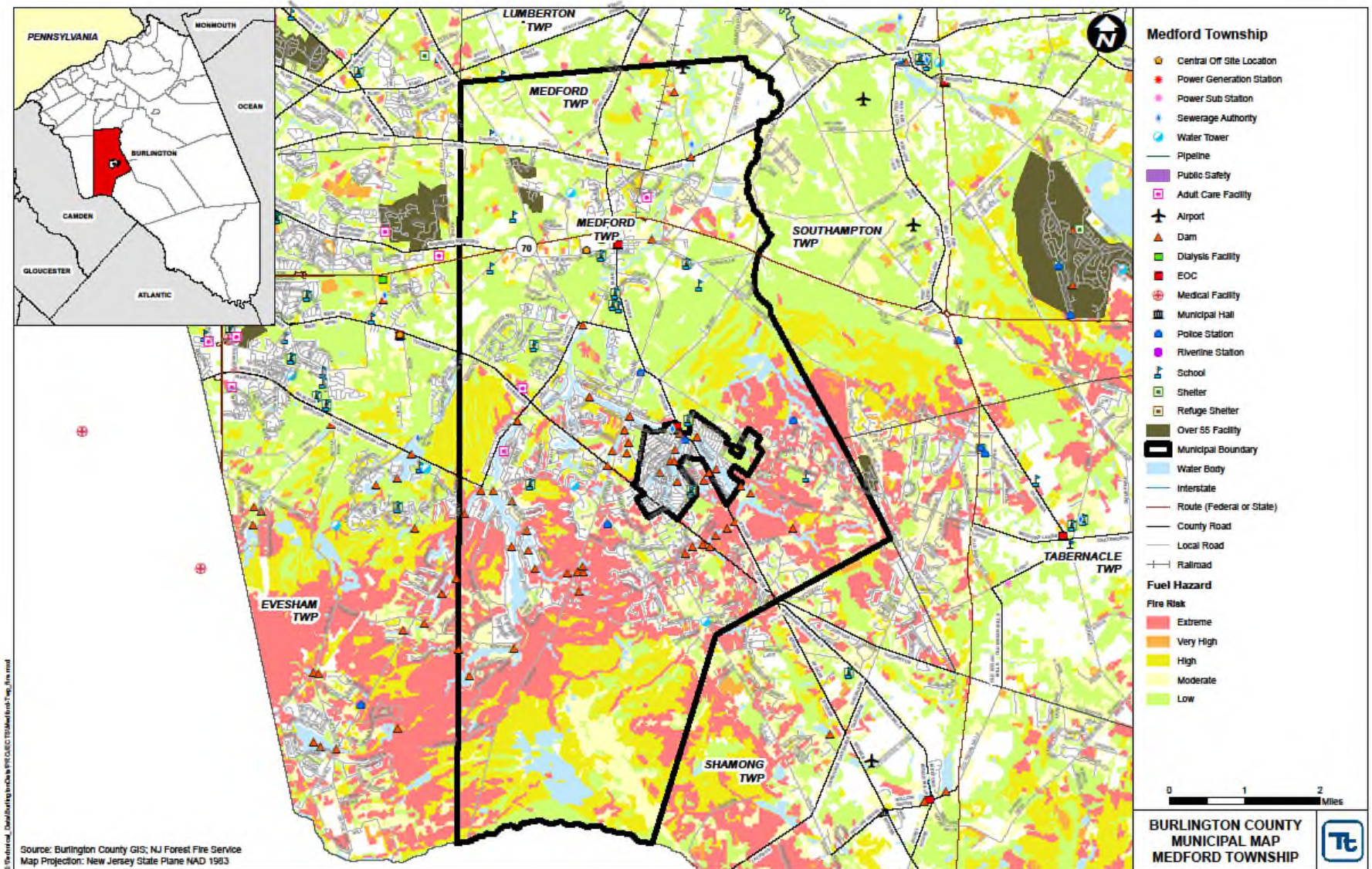


Figure 9.21-2: Medford Wildfire Fuel Exposure



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

It is the intention of the Township of Medford 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
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	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	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

9.21.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

