



SOMERSET COUNTY

HAZARD MITIGATION PLAN

SOMERSET COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

FINAL PLAN UPDATE
JULY 2019

www.co.somerset.nj.us/hmp

Section 9.22: Borough of Watchung Annex

*Prepared by the Somerset County
Mitigation Planning Committee*



9.22 Borough of Watchung

This section presents the jurisdictional annex for the Borough of Watchung (hereinafter referred to as Watchung Borough or Watchung).

9.22.1 HAZARD MITIGATION PLAN POINTS OF CONTACT

Hazard Mitigation Plan Points of Contact					
Primary Point of Contact			Alternate Point of Contact		
Name: Gary Greaves, OEM Coordinator Address: 15 Mountain Boulevard, Watchung, NJ 07069 Phone Number: 908-756-0091 Fax Number: 908-756-8980 E-mail Address: ggreaves@watchungnj.com			Name: Thomas J. Herits, PE PP PLS, Borough Engineer Address: 15 Mountain Boulevard, Watchung, NJ 07069 Phone Number: 908-756-0091 Fax Number: 908-756-8980 E-mail Address: therits@watchungnj.com		
Municipal HMP Committee Members					
Local Jurisdiction Role/Position	Name	Email	Phone	Date Notified About Mitigation Plan Development	Agreed to participate? (Yes/No)
Land Use/Community Planner	Thomas J Herits PE PP PLS	therits@watchungnj.gov	908-756-0091	1/30/2018	Yes
Emergency Manager	Gary Greves	ggreves@watchungnj.gov	908-756-0091		Yes
Floodplain Manager/ Floodplain Administrator	Thomas J Herits PE PP PLS	therits@watchungnj.gov	908-756-0091	1/30/2018	Yes
Public Works Director / City Engineer	Thomas J Herits PE PP PLS	therits@watchungnj.gov	908-756-0091	1/30/2018	Yes
Building Code Official	Edward Bennett	ebennett@watchungnj.gov	908-756-0080	1/30/2018	Yes
Fiscal/Budget Officer	William Hance CMFO	bhance@watchungnj.gov	908-756-0080	8/1/2017	Yes
Manager/Administrator	Thomas E Atkins	tatkins@watchungnj.gov	908-756-0080	8/1/2017	Yes
Elected Officials	Stephen Pote, Mayor	spote@watchungnj.gov	908-756-0080	8/1/2017	Yes
Other 1:	Michelle DeRocco, RMC	mderocco@watchungnj.gov	908-756-0080	8/1/2017	Yes

9.22.2 PROFILE

9.22.2.1 Population

The population of Watchung Borough is estimated to be 5,801, based on information gathered during the 2010 U.S. Census. Census population estimates of July 2017 indicated a total population of 5,985.

9.22.2.2 Location

Watchung Borough is located in the northeastern corner of Somerset County, bordered by the First Watchung Mountain to the south and the Second Watchung Mountain to the north. The Borough contains approximately six (6) square miles, or 3,840 acres of land area. It is traversed in its entirety southwest to northeast by Mountain Boulevard and Valley Road, also known as County Route 527. County Route 531 runs north to south through the center of Watchung. Interstate 78 crosses the northern edge of the Borough, with access interchanges provided in Watchung Borough at Exit 41 (Stony Hill Road) and in neighboring Warren Township at Exit 40 (Hillcrest Road). To the southeast, U.S. Highway 22 runs through a small section of the Borough.

9.22.2.3 Brief History

Watchung was organized on April 20, 1926. Watchung was settled in the early eighteenth century and grew slowly until recent years. In 1960 the population was 3,312; in 2000 it was 5,613; and is currently estimated to be over 5,900.

9.22.2.4 Governing Body Format

Watchung is governed under the borough form of government outlined in Chapter 60 of Title 40A of the New Jersey Statutes Annotated. The governing body consists of the mayor with a four year term and six councilmembers with three year terms elected at large in the Borough.

9.22.2.5 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 Borough (updated in 2018).

New Development/Potential Development in Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Affordable Housing	Residential	20	East Drive	Block 57.01 Lot 6.01	Steep Slopes	On Hold

9.22.3 NATURAL HAZARD EVENT HISTORY SINCE 2014

Somerset County has a history of natural hazard events as detailed in 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 2014 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 2014, refer to Section 5.0 of this plan.

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Cold/Wind Chill	N/A	N/A	January 4, 2014	No local damage reported
Strong Wind	N/A	N/A	January 6, 2014	No local damage reported
Flood	N/A	N/A	January 6, 2014	No local damage reported
Cold/Wind Chill	N/A	N/A	January 7, 2014	No local damage reported
Cold/Wind Chill	N/A	N/A	January 22, 2014	No local damage reported
Winter Storm	N/A	N/A	February 12, 2014	No local damage reported
Flood	N/A	N/A	February 22, 2014	No local damage reported
Strong Wind	N/A	N/A	March 12, 2014	No local damage reported
Flood	N/A	N/A	March 30, 2014	No local damage reported
Flood	N/A	N/A	April 1, 2014	No local damage reported
Thunderstorm Wind	N/A	N/A	April 15, 2014	No local damage reported
Flood	N/A	N/A	April 15, 2014	No local damage reported
Flood	N/A	N/A	April 30, 2014 to May 1, 2014	No local damage reported
Thunderstorm Wind	N/A	N/A	May 10, 2014	No local damage reported
Earthquake, Magnitude 1.9, 6 km N of Boonton (Montville Twp.)	N/A	N/A	May 31, 2014	No local damage reported
Earthquake, Magnitude 1.0, 13 km SW of Ramblewood, NJ (Laurel Springs Boro.)	N/A	N/A	June 19, 2014	No local damage reported
Thunderstorm Wind	N/A	N/A	July 2, 2014	No local damage reported
Heat	N/A	N/A	July 2, 2014	No local damage reported
Thunderstorm Wind	N/A	N/A	July 3, 2014	No local damage reported
Flash Flood	N/A	N/A	July 3, 2014	No local damage reported
Thunderstorm Wind	N/A	N/A	July 8, 2014	No local damage reported
Earthquake, Magnitude 1.6, 3 km W of Jersey City, NJ (Kearny Town)	N/A	N/A	July 8, 2014	No local damage reported

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Flood	N/A	N/A	July 16, 2014	No local damage reported
Earthquake, Magnitude 1.2, 4 km SW of Ringwood, NJ (Ringwood Boro.)	N/A	N/A	July 28, 2014	No local damage reported
Flash Flood	N/A	N/A	August 21, 2014	No local damage reported
Earthquake, Magnitude 1.3, 2 km S of Park Ridge, NJ (Woodcliff Lake Boro.)	N/A	N/A	September 3, 2014	No local damage reported
Flood	N/A	N/A	December 9, 2014	No local damage reported
Earthquake, Magnitude 1.9, 13 km SE of Twin Rivers, NJ (Millstone Twp.)	N/A	N/A	December 13, 2014	No local damage reported
Earthquake, Magnitude 1.5, 2 km SW of Clifton, NJ (Bloomfield Twp.)	N/A	N/A	December 28, 2014	No local damage reported
Cold/Wind Chill	N/A	N/A	January 7, 2015	No local damage reported
Flood	N/A	N/A	January 18, 2015	No local damage reported
Strong Wind	N/A	N/A	February 2, 2015	No local damage reported
Cold/Wind Chill	N/A	N/A	February 13, 2015	No local damage reported
Strong Wind	N/A	N/A	February 15, 2015	No local damage reported
Cold/Wind Chill	N/A	N/A	February 15, 2015	No local damage reported
Cold/Wind Chill	N/A	N/A	February 16, 2015	No local damage reported
Cold/Wind Chill	N/A	N/A	February 20, 2015	No local damage reported
Cold/Wind Chill	N/A	N/A	February 24, 2015	No local damage reported
Flood	N/A	N/A	March 11, 2015	No local damage reported
Flood	N/A	N/A	March 14, 2015	No local damage reported
Earthquake, Magnitude 1.2, 2 km SW of Clifton, NJ (Bloomfield Twp.)	N/A	N/A	March 27, 2015	No local damage reported
Strong Wind	N/A	N/A	April 4, 2015	No local damage reported
Flash Flood	N/A	N/A	May 31, 2015	No local damage reported
Earthquake, Magnitude 1.2, 2 km N of Wanaque, NJ (Ringwood Boro.)	N/A	N/A	July 12, 2015	No local damage reported
Heat	N/A	N/A	July 19, 2015	No local damage reported

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Earthquake, Magnitude 2.7, 3.5 km N of Bernardsville, NJ (Bernardsville Boro.)	N/A	N/A	August 14, 2015	No local damage reported
Flash Flood	N/A	N/A	August 19, 2015	A nearly stationary thunderstorm produced torrential rainfall in Watchung Township in the far northeastern part of Somerset County and into adjacent parts of neighboring Union County during the afternoon of the 19th. Resulting flash flooding in Watchung Township caused cars to be stuck in two to three feet of water along Route 22 at the intersection of Terrill Road. At the nearby Weldon Materials Quarry, the partial collapse of a 100 foot by 30 foot retaining wall was reported near the intersection of New Providence Road and Union Avenue. Multiple vehicles were crushed along with heavy flooding off the mountain as a result of the retaining wall collapse. In addition to Route 22 being gridlocked in both directions, standing water and flooded exits caused multiple mile backups along nearby Interstate 78. A CoCoRahs observer in nearby New Providence (Union County) measured 4.02 inches of rainfall.
Flood	N/A	N/A	August 19, 2015	No local damage reported
Earthquake, Magnitude 1.4, 5 km WNW of Fairfield, NJ (Fairfield Twp.)	N/A	N/A	August 22, 2015	No local damage reported
Drought and Excessive Heat	N/A	N/A	April 2015 – September 2015	No local damage reported
Combined effects of freeze, excessive heat, and drought	N/A	N/A	April 2016 – September 2016	No local damage reported
Earthquake, Magnitude 2.1, 2.4 km NW of Ringwood, NJ (Ringwood Boro.)	N/A	N/A	January 2, 2016	No local damage reported
Severe Winter Storm and Snowstorm (Blizzard)	DR-4264	Yes	January 22-24, 2016	No local damage reported

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Earthquake, Magnitude 1.1, 1.1 km NW of Butler, NJ (Bloomingdale Boro.)	N/A	N/A	February 19, 2016	No local damage reported
Flash Flood	N/A	N/A	February 24, 2016	Strong to severe thunderstorms caused heavy rain and flooding. The stream gage on Stony Brook at North Plainfield and at Watchung reached its flood stage.
Thunderstorm Wind	N/A	N/A	April 2, 2016	No local damage reported
Earthquake, Magnitude 0.8, 4.4 km N of Butler, NJ (Bloomingdale Boro.)	N/A	N/A	May 27, 2016	No local damage reported
Lightning	N/A	N/A	June 8, 2016	No local damage reported
Thunderstorm Wind	N/A	N/A	June 8, 2016	No local damage reported
Lightning	N/A	N/A	June 28, 2016	No local damage reported
Thunderstorm Wind	N/A	N/A	June 28, 2016	No local damage reported
Earthquake, Magnitude 1.1, 1 km NW of Butler, NJ (Butler Boro.)	N/A	N/A	July 4, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 8, 2016	No local damage reported
Flood	N/A	N/A	July 8, 2016	No local damage reported
Thunderstorm Wind	N/A	N/A	July 18, 2016	No local damage reported
Thunderstorm Wind	N/A	N/A	July 25, 2016	No local damage reported
Thunderstorm Wind	N/A	N/A	July 25, 2016	No local damage reported
Thunderstorm Wind	N/A	N/A	July 25, 2016	No local damage reported
Flood	N/A	N/A	July 25, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 30, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 31, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 31, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 31, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 31, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 31, 2016	No local damage reported
Heavy Rain	N/A	N/A	July 31, 2016	No local damage reported
Flash Flood	N/A	N/A	July 31, 2016	No local damage reported
Earthquake, Magnitude 0.8, 2.2 km SW of Clifton, NJ (Bloomfield Twp.)	N/A	N/A	July 31, 2016	No local damage reported

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Earthquake, Magnitude 1.0, 2 km N of Wanaque, NJ (Wanaque Boro.)	N/A	N/A	August 9, 2016	No local damage reported
Earthquake, Magnitude 0.5, 1 km N of Butler, NJ (Bloomingdale Boro.)	N/A	N/A	August 9, 2016	No local damage reported
Earthquake, Magnitude 0.6, 5 km NE of Wanaque, NJ (Ringwood Boro.)	N/A	N/A	September 20, 2016	No local damage reported
Earthquake, Magnitude 1.5, 2.6 km W of Bellmar, NJ (Westville Boro.)	N/A	N/A	November 6, 2016	No local damage reported
Earthquake, Magnitude 2.0, 16.3 km E of Highlands, NJ (Middletown Twp.)	N/A	N/A	November 6, 2016	No local damage reported
Earthquake, Magnitude 1.31, 1.4 km S Morris Plains, NJ (Morris Plains Boro.)	N/A	N/A	March 25, 2017	No local damage reported
Flood	N/A	N/A	March 31, 2017	No local damage reported
Hail	N/A	N/A	May 14, 2017	No local damage reported
Hail	N/A	N/A	May 31, 2017	No local damage reported
Flood	N/A	N/A	June 24, 2017	No local damage reported
Flood	N/A	N/A	July 22, 2017	No local damage reported
Flood	N/A	N/A	August 22, 2017	No local damage reported
Flood	N/A	N/A	August 22, 2017	No local damage reported
Heavy Rain	N/A	N/A	August 23, 2017	No local damage reported
Earthquake, Magnitude 1.71, 3.7 km SW of Morris Plains, NJ (Morris Twp.)	N/A	N/A	September 25, 2017	No local damage reported
Earthquake, Magnitude 0.98, 2.7 km SW of Morris Plains, NJ (Morris Twp.)	N/A	N/A	September 30, 2017	No local damage reported
Flood	N/A	N/A	October 29, 2017	No local damage reported

Natural Hazard Event History				
Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Earthquake, Magnitude 1.38, 3.5 km NW of Keansburg, NJ (Keansburg Boro.)	N/A	N/A	November 8, 2017	No local damage reported
Severe Winter Storm and Snowstorm (Blizzard)	DR-4368	Yes	March 6, 2018	Although all portions of the county experienced significant snowfall from this event, the higher amounts (around one and one half feet) occurred in the eastern sections of the county closer to the off shore low pressure system. Thundersnow also occurred in a few locations.

Note:

DR = Major Disaster Declaration

EM = Emergency Declaration

N/A = Not applicable

Boro. = Borough

Twp. = Township

9.22.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

The table below summarizes the vulnerability risk rankings of potential hazards of Watchung Borough (updated in 2018).

Natural Hazard Risk/Vulnerability Risk Ranking				
Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Flood	1% Annual Chance: \$57,400,000 0.2% Annual Chance: \$70,300,000	Frequent	18	Medium
Severe Storm	100-Year MRP: \$220,478 500-Year MRP: \$3,355,668 Annualized Loss: \$24,362	Frequent	39	High
Severe Winter Storm	1% of GBS: \$9,257,100 5% of GBS: \$46,285,500	Frequent	27	Medium
Earthquake	500-Year MRP: \$1,744,532 2,500-Year MRP: \$25,967,872 Annualized Loss: \$26,604	Occasional	12	Low
Drought	Not available	Occasional	20	Medium
Extreme Temperature	Not available	Frequent	27	Medium
Wildfire	Not available	Occasional	32	High

Note

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- The valuation of general building stock and loss estimates was based on custom inventory for Somerset County.
- 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
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood and earthquake hazards represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.

9.22.5 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

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

9.22.5.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Watchung. The Borough reviewed its responses from the 2014 HMP and has updated any information that has changed since that time.

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	Y	Edward Bennett, Construction Official	International Building Code – New Jersey Edition, NJAC 5:24-3.14; 2/20/07
2) Zoning Ordinance	Y	Edward Bennett, Zoning Officer	Land Development Ordinances: Chapter 28- 300, 400; 3/12/09
3) Subdivision Ordinance	Y	Edward Bennett, Zoning Officer	Land Development Ordinances: Chapter 28 – 800; 3/12/09
4) NFIP Flood Damage Prevention Ordinance	Y	Thomas Herits, PE PP PLS, Municipal Engineer and Planner	Chapter 22, FDP Ordinance; 7/19/07
4a) Cumulative Substantial Damages	-	-	-
4b) Freeboard	-	-	-
5) Growth Management	-	-	-
6) Floodplain Management / Basin Plan	-	-	-
7) Stormwater Management Plan/Ordinance	Y	Thomas Herits, PE PP PLS, Municipal Engineer and Planner	Stormwater Management Plan; NJAC 7:8, et seq.; Stormwater Ordinance ; 4/26/07

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)
8) Comprehensive Plan / Master Plan/ General Plan	Y	Maryann Amiano, Planning Board/ Carolyn Taylor, Building Department/ Thomas Herits, PE PP PLS, Municipal Engineer and Planner	Municipal Master Plan and LDO; 2011
9) Capital Improvements Plan	-	-	Municipal 5 year Capital Plan
10) Site Plan Review Requirements	Y	Thomas Herits, PE PP PLS, Municipal Engineer and Planner	Zoning Ordinances and Construction Code; 3/12/09
11) Open Space Plan	Y	Thomas Herits, PE PP PLS, Municipal Engineer and Planner	6/06
12) Stream Corridor Management Plan	-	-	-
13) Watershed Management or Protection Plan	-	-	-
14) Economic Development Plan	-	-	-
15) Comprehensive Emergency Management Plan	-	-	-
16) Emergency Response Plan	Y	Gary Greves, OEM Coordinator	Municipal EOP; 11/23/05
17) Post-Disaster Recovery Plan	-	-	-
18) Post-Disaster Recovery Ordinance	-	-	-
19) Real Estate Disclosure Requirement	-	-	-
20) Other (Special Purpose Ordinances such as critical or sensitive areas)	-	-	-

9.22.5.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to Watchung Borough. The Borough reviewed its responses from the 2014 HMP and has updated any information that has changed since that time.

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	Thomas Herits, PE PP PLS, Municipal Engineer and Planner
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Thomas Herits, PE PP PLS, Municipal Engineer
3) Planners or engineers with an understanding of natural hazards	Y	Thomas Herits, PE PP PLS, Municipal Engineer and Planner
4) NFIP Floodplain Administrator	Y	Thomas Herits PE PP PLS, Municipal Engineer
5) Surveyor(s)	Y	Thomas Herits PE PP PLS, Municipal Surveyor
6) Personnel skilled or trained in GIS applications	Y	Public Works, Bob Burns, Public Works Manager DEMC1 and Maser Consulting PA , Sue Zitzman
7) Scientist familiar with natural hazards	N	-
8) Emergency Manager	Y	Gary Greves, EMC
9) Grant Writer(s)	Y	Thomas Herits PE PP PLS, Municipal Engineer
10) Staff with expertise or training in benefit/cost analysis	Y	William Hance, CFO

9.22.5.3 Fiscal Capability

The table below summarizes financial resources available to Watchung Borough. The Borough reviewed its responses from the 2014 HMP and has updated any information that has changed since that time.

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

9.22.5.4 Overall Capabilities

The Borough of Watchung's 2018 assessment of its overall capabilities to implement hazard mitigation strategies in each of the above categories, in addition to their local assessment of how these capabilities could be expanded and/or improved to reduce risk, is presented in the table below.

Overall legal and regulatory capability to implement hazard mitigation strategies	Overall technical capability to implement hazard mitigation strategies	Overall fiscal capability to implement hazard mitigation strategies	Overall administrative capability to implement hazard mitigation strategies	Community's willingness to enact policies and programs that reduce hazard vulnerabilities
High	High	Moderate	High	Moderate
How these capabilities can be expand and/or improved to reduce risk				
Including hazards and hazard mitigation strategies in the Borough Master Plan would bolster the Borough's capabilities to implement and address said strategies.				

9.22.5.5 Community Classifications

The table below summarizes classifications for community program available to the Borough of Watchung. The Borough reviewed its responses from the 2014 HMP and has updated any information that has changed since that time.

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS)	N/P	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	04	11/2016
Storm Ready	N/P	
Firewise	N/A	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating

* CRS Ranking as of October 2017

The classifications listed above relate to Watchung's ability to provide effective services to lessen its vulnerability to the natural hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS Class applies to flood insurance, while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with Class 1 being the best possible classification, and Class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1,000 feet of a creditable fire hydrant and is within 5 road miles of a recognized fire station.

Criteria for classification credits are outlined in the following documents:

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

9.22.6 MITIGATION STRATEGY

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

9.22.6.1 Past Mitigation Actions/Status

The status of all 2014 HMP initiatives was evaluated by the Borough of Watchung in 2018 and is presented in the following table. The community has indicated that local priorities have not changed since the last version of the plan.

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC1	In accordance with Watchung Reexamination of Master Plan and Development Regulations, it is recommended that the Borough consider: Impervious coverage limits for the Borough's R-M-L Districts to minimize flood impacts. The Connell properties along Valley Road (i.e., opposite quarry area) should remain in its low density residential zone and should be out of the sewer service area. The area is heavily constrained by environmental factors and should be pursued for open space acquisition consistent with the Open Space Plan. The remaining properties not in public ownership are to be acquired so the entire area can be developed as a park.	High	Flood	Engineering Department, Borough Council			X		The Borough continues to address impervious coverage two (2) ways: 1) Thru the Land Disturbance Permit (LDP) process which requires construction of seepage pits for recharge of all impervious construction on a lot, whether new construction or additions, residential or non-residential; 2) The LDP also requires a developer to complete a slope analysis of the property-in-question which usually results in a reduction in the amount of the impervious coverage from the bulk standard for that particular zone. The Connell properties along Valley Road remain zoned RR, low density residential.	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC2	Installation of electric power lines underground.	High	All	Engineering Department				X	This is still a high priority, and the Borough constantly looks for grants to accomplish this initiative due to the high cost associated with this initiative.	X		No Change
WC3	Installation of emergency generators and radio communication upgrades at critical locations: Police Department, Fire Department, Municipal building, and Exempt Hall Emergency Shelter.	High	All	Engineering Department, Police Department, OEM, Fire Department	X				Completed	X		Maintain all emergency generators to insure proper operation during power failures.
WC4	Installation of underground communication line at Johnson Avenue, which services New Jersey State Police, Somerset County Communications, and numerous local Police, Fire, and EMS departments.	High	All	Engineering Department; NJ State Police, OEM, Police Department, Fire Department, EMS				X	This is still a high priority, and the Borough constantly looks for grants to accomplish this initiative due to the high cost associated with this initiative.	X		No Change
WC5 (WC1)	Provide back-up power at critical facilities.	Medium	All	OEM; Engineering and Public Works	X				Completed	X		Maintain all emergency generators to insure proper operation during power failures.
WC 6 (WC4)	Investigate opportunities to Retrofit vulnerable critical facilities and infrastructure.	High	All	Engineering; Public Works; OEM				X	Lack of Funding	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC7 (WC5)	Consider Participation in the CRS.	Medium	Flooding	Dept. of Engineering; Public Works				X	Lack of Staffing	X		No Change
WC8 (WC8)	Vegetative Growth and Embankment Reconstruction Management.	Medium	Flooding	Public Works; Engineering; Environmental				X	Lack of Staffing	X		No Change
WC9 (WC10)	Strive to maintain compliance with and good-standing in the National Flood Insurance program.	Medium	Flood	Borough Engineer			X		Ongoing	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC10	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.	High	All Hazards	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA				X	Lack of Staffing	X		No Change
WC11	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).	Medium	All Hazards	Municipality with support from County, NJOEM and FEMA			X		The Borough utilized a GIS system to track assets, as well as, service requests and repairs.	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC12	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.	Medium	All Hazards	Hazard Mitigation Plan Coordinator			X		Ongoing	X		No Change
WC13	Support ongoing updates of Comprehensive Emergency Management Plans	High	All Hazards	Municipality with support from County Emergency Management			X		Ongoing	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC14	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations.	High	All Hazards	Municipality with support from County, NJOEM, FEMA and surrounding communities			X		Ongoing	X		No Change
WC15	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.	Medium	All Hazards	Municipality with support from County, NJOEM and FEMA			X		Ongoing	X		No Change
WC16	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).	Medium	All Hazards	Municipality with support from County, NJOEM and FEMA			X		Ongoing	X		No Change
WC17	Continue to support the implementation, monitoring, maintenance, and updating of this Plan (through participating in the 5 year Plan Update), as defined in Section 7.0.	High	All Hazards	Municipality with support from Planning Partners,			X		Ongoing	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC18	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 the one severe repetitive loss property within the Borough and the Warren Emergency Management Facility, which has been identified as a vulnerable critical facility. 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.	Medium	Flood,	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from County Planning, NJOEM, FEMA				X	Lack of Funding	X		No Change
WC19	Obtain and archive elevation certificates.	High	Flood, Severe Storm	NFIP Floodplain Administrator			X		Ongoing	X		No Change
WC20	Promote the participation of Floodplain Administrators within the planning process and other activities.	Medium	Flood	Municipality with support from County, NJOEM and FEMA			X		Ongoing	X		No Change
WC21	Enhance the County/community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program and supporting communities in joining the program.	Medium	Severe Storm	Municipality with support from County, NJOEM and FEMA				X	Lack of Staffing	X		No Change

2014 HMP Initiative #	Mitigation Initiative Description	2014 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
WC22	Implement permit fee waivers for installation of backup power for private property.	High	Severe Storm	Municipal Council				X	Not initiated	X		No Change
WC23	Provide public education and outreach on proper installation and/or use of backup power	High	Severe Storm	Municipal Clerk				X	Lack of Staffing	X		No Change
WC24	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption.	High	Severe Storm	Municipal Code Enforcement			X		Ongoing	X		No Change

9.22.6.2 Hazard Vulnerabilities Identified

The Borough has identified three major hazard problem areas:

- Wind damage and loss of electricity from downed trees and power lines.
- Wind damage and loss of communication lines located on Johnston Drive, utilized by NJ State police, Somerset County Communications, and numerous other local Police, Fire, and EMS organizations.
- Flooding of Route 22 and North Avenue intersection.

It is estimated that in the Borough, 42 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). \$534,289,000 (35.5%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

There are 44 NFIP policies in the community and there are 11 policies located within the 1% annual chance flood area. FEMA has identified 3 Repetitive Loss (RL) properties including 0 Severe Repetitive Loss (SRL) properties in the municipality.

HAZUS-MH estimates that for a 1% annual chance flood, \$57,400,000 (3.81%) of the municipality's general building stock replacement cost value (structure and contents) will be damaged, 492 households may be displaced, 359 people may seek short-term sheltering, and an estimated 2,107 tons of debris could be generated.

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)
Watchung (B)	44	26	\$218,788	3	-	11	3	30

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 via NJDEP in August 2017 and are current as of March 31, 2017. 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 Borough of Watchung).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH critical facility damage estimates for Watchung Borough are provided below.

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⁾
Warren Emergency Management	Watchung (B)	EOC	x	x	51.2	100.0	900.0	61.6	100	900

Source: HAZUS-MH 4.0

Notes:

- = No loss (calculated by HAZUS-MH 4.0)
- X = Facility located within the DFIRM boundary.
- DFIRM = Digital Flood Insurance Rate Map
- NA = Not available
- B = Borough

- (1) HAZUS-MH 4.0 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 4.0 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 5.0 of this plan for additional vulnerability information relevant to this jurisdiction.

9.22.7 PROPOSED HAZARD MITIGATION INITIATIVES

The list below represents a summary of community mitigation initiatives developed in 2018 as part of the most recent plan update. The Borough of Watchung has identified no changes in local priorities since the last version of the plan in 2014. Detailed Action Worksheets are included only for NEW Mitigation Actions/Projects. 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. Please note that the Borough has opted to carry forward legacy initiative numbers from the 2014 and 2009 plans, respectively, for internal municipal tracking purposes, formatted as: “2019# [2014# (2009#)]”.

Proposed Hazard Mitigation Initiatives														
2019 Initiative Number	Initiative Name	Initiative Description	New Initiative Or Carried Forward	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	2018 Action Status
WC1 [(WC1)]	Flood Mitigation	In accordance with Watchung Reexamination of Master Plan and Development Regulations, it is recommended that the Borough consider: Impervious coverage limits for the Borough's R-M-L Districts to minimize flood impacts. The Connell properties along Valley Road (i.e., opposite quarry area) should remain in its low density residential zone and should be out of the sewer service area. The area is heavily constrained by environmental factors and should be pursued for open space acquisition consistent with the Open Space Plan. The remaining properties not in public ownership are to be acquired so the entire area can be developed as a park.	Carried Forward	New and Existing	Flood	8,9,10	Engineering Department	High	High	Operating Budget, HMA	Long Term	High	Capability, PP	Ongoing. The Borough continues to address impervious coverage two (2) ways: 1) Thru the Land Disturbance Permit (LDP) process which requires construction of seepage pits for recharge of all impervious construction on a lot, whether new construction or additions, residential or non-residential; 2) The LDP also requires a developer to complete a slope analysis of the property-in-question which usually results in a reduction in the amount of the impervious coverage from the bulk standard for that particular zone. The Connell properties along Valley Road remain zoned RR, low density residential.
WC2 [(WC2)]	Underground Powerlines	Installation of electric power lines underground.	Carried Forward	Existing	All	1,2,4,8	Engineering Department	High	High	FEMA	Short Term	High	Action/Project, SP	Not initiated. This is still a high priority, and the Borough constantly looks for grants to accomplish this initiative due to the high cost associated with this initiative.
WC3 [(WC3)]	Generator and Communications Upgrades	Installation of emergency generators and radio communication upgrades at critical locations: Police Department, Fire Department, Municipal building, and Exempt Hall Emergency Shelter.	Carried Forward	Existing	All	6,7	Engineering Department, Police Department, OEM, Fire Department	High	High	FEMA	Short Term	High	Capability, PR ES	The Borough has completed the installation of emergency generators at three (3) of their critical facilities, and is in the process of completing the installation of emergency generators at two (2) additional critical facilities. Generators will need to be maintained to insure proper operation during power failure.



Proposed Hazard Mitigation Initiatives														
2019 Initiative Number	Initiative Name	Initiative Description	New Initiative Or Carried Forward	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	2018 Action Status
WC4 [WC4]	Underground Communications Line	Installation of underground communication line at Johnson Avenue, which services New Jersey State Police, Somerset County Communications, and numerous local Police, Fire, and EMS departments.	Carried Forward	Existing	All	6,7	Engineering Department; NJ State Police, OEM, Police Department, Fire Department, EMS	High	High	FEMA	Short Term	High	Action/Project, PR ES	Not initiated. This is still a high priority, and the Borough constantly looks for grants to accomplish this initiative due to the high cost associated with this initiative.
WC5 [WC1]	Critical Facilities Hardening - Backup Power	Provide back-up power at critical facilities.	Carried Forward	Both	All	6,7	OEM; Engineering and Public Works	High	Low	Capital Budget	Long Term	Medium	Capability, PR	The Borough has completed the installation of emergency generators at three (3) of their critical facilities, and is in the process of completing the installation of emergency generators at two (2) additional critical facilities. Generators will need to be maintained to insure proper operation during power failure.
WC6 [WC 6 (WC4)]	Critical Facilities Hardening - Retrofit	Investigate opportunities to retrofit vulnerable critical facilities and infrastructure	Carried Forward	Existing	All	6,7	Engineering; Public Works; OEM	Medium	Low	Operating, Capital and Grant sources	Short Term	High	Action/Project, PP	Not initiated; lack of funding.
WC7 [WC7 (WC5)]	Community Rating System	Consider participation in the CRS.	Carried Forward	Both	Flooding	12	Dept. of Engineering; Public Works	Medium	Low	Operating	Long Term	Medium	Capability, PR	Not initiated; lack of staffing.
WC8 [WC8 (WC8)]	Flood Mitigation	Vegetative Growth and Embankment Reconstruction Management.	Carried Forward	Both	Flooding	8,9,10	Public Works; Engineering; Environmental	Medium	Medium to High	FEMA Grant	Long term	Medium	Capability, NR	Not initiated; lack of staffing.
WC9 [WC9 (WC10)]	National Flood Insurance Program	Strive to maintain compliance with and good-standing in the National Flood Insurance Program.4	Carried Forward	Both	Flood	4	Borough Engineer	Low	Low	Operating Budget	Short Term	Medium	Capability, PR	Ongoing

Proposed Hazard Mitigation Initiatives														
2019 Initiative Number	Initiative Name	Initiative Description	New Initiative Or Carried Forward	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	2018 Action Status
WC10 [WC10]	Public Education and Outreach	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.	Carried Forward	N/A	All Hazards	5,13	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	Capability, PE	Not initiated; lack of staffing.
WC11 [WC11]	GIS Flood Database	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).	Carried Forward	N/A	All Hazards	1	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	Capability, PR	Ongoing. The Borough utilized a GIS system to track assets, as well as, service requests and repairs.

Proposed Hazard Mitigation Initiatives														
2019 Initiative Number	Initiative Name	Initiative Description	New Initiative Or Carried Forward	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	2018 Action Status
WC12 [WC12]	Risk Assessment	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.	Carried Forward	N/A	All Hazards	1,3	Hazard Mitigation Plan Coordinator	Medium-High	Medium-High	FEMA Mitigation Grant Programs with local match	Long Term DOF	Medium	Capability, PR	Ongoing
WC13 [WC13]	Updates to Emergency Management Plans	Support ongoing updates of Comprehensive Emergency Management Plans.	Carried Forward	New and Existing	All Hazards	8,9	Municipality with support from County Emergency Management	Low	Low	Municipal Budget	Ongoing	High	Capability, PR	Ongoing
WC14 [WC14]	Mutual Aid Agreements	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations.	Carried Forward	N/A	All Hazards	3,7	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	Capability, PR, ES	Ongoing

Proposed Hazard Mitigation Initiatives														
2019 Initiative Number	Initiative Name	Initiative Description	New Initiative Or Carried Forward	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	2018 Action Status
WC15 [WC15]	Disaster Mitigation	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.	Carried Forward	N/A	All Hazards	3	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	Action/Project, PR, ES	Ongoing
WC16 [WC16]	Damage Assessment	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).	Carried Forward	N/A	All Hazards	3	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget, FEMA HMA and HLS grant programs	Short-Long Term DOF	Medium	Capability, PR	Ongoing
WC17 [WC17]	Mitigation Plan	Continue to support the implementation, monitoring, maintenance, and updating of this Plan (through participating in the 5 year Plan Update), as defined in Section 7.0.	Carried Forward	New and Existing	All Hazards	All	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low – High (for 5 year update)	Municipal Budget, FEMA planning grants	Ongoing	High	Capability, PR	Ongoing
WC18 [WC18]	Flood Mitigation	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 the one severe repetitive loss property within the Borough and the Warren Emergency Management Facility, which has been identified as a vulnerable critical facility. 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	Carried Forward	Existing	Flood, Severe Storm	4	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from County Planning, NJOEM, FEMA	High	High	FEMA Mitigation Grants	Long Term DOF	Medium	Capability, PP	Not initiated; lack of funding.
WC19 [WC19]	Elevation Certificates	Obtain and archive elevation certificates.	Carried Forward	N/A	Flood, Severe Storm	1,3	NFIP Floodplain Administrator	Medium	Low	Municipal Budget	Ongoing	High	Capability, PR	Ongoing



Proposed Hazard Mitigation Initiatives														
2019 Initiative Number	Initiative Name	Initiative Description	New Initiative Or Carried Forward	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	2018 Action Status
WC20 [WC20]	Floodplain Mitigation	Promote the participation of Floodplain Administrators within the planning process and other activities.	Carried Forward	N/A	Flood	All	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short Term	Medium	Capability, PR	Ongoing
WC21 [WC21]	Storm Mitigation	Enhance the County/community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program and supporting communities in joining the program.	Carried Forward	N/A	Severe Storm	12	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	Action/ Project, PE	Not initiated; lack of staffing.
WC22 [WC22]	Permit Fee Waivers	Implement permit fee waivers for installation of backup power for private property.	Carried Forward	N/A	Severe Storm	12	Municipal Council	Medium	Low	Municipal Budget	Short Term	High	Action/ Project, PR	Not initiated
WC23 [WC23]	Public Education and Outreach	Provide public education and outreach on proper installation and/or use of backup power.	Carried Forward	N/A	Severe Storm	5,13	Municipal Clerk	Medium	Low	Municipal Budget	Short Term	High	Action/ Project, PR	Not initiated; lack of staffing.
WC24 [WC24]	Tree Mitigation	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption.	Carried Forward	N/A	Severe Storm	2,3,5,8	Municipal Code Enforcement	Medium	Low	Municipal Budget	Short Term	High	Capability, PR	Ongoing
WC25	Stream Cleaning	De-snagging of the streams, ditches, and in front of culverts, and cleaning under bridges.	New Initiative	New and Existing	Flood	10	Engineering, Public Works	Low	Low	Municipal Budget	Short Term	Low	Action/ Project, PP, PR	New initiative

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.

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

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

Timeline:

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



Costs:

Where actual project costs have been reasonably estimated:

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

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

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

Benefits:

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

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

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

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

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.
- 7. Initiative= Initiatives are comprised of EVERYTHING your community wants to do or is doing in order to meet its mitigation goals. Initiatives include Capabilities, Actions and Projects.
- 8. Capability= Regulatory, administrative, technical, and fiscal staffing, tools and/or resources. Capabilities can be existing, or in need of further development/expansion.
- 8. Action/Project= Specific activities or projects that your community plans to undertake or is currently completing in order to achieve its long term mitigation goals. Actions/Projects can include, but are not limited to: structural projects, infrastructure projects, natural systems protection projects, or education and awareness programs.

9.22.8 PRIORITIZATION OF MITIGATION INITIATIVES

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

Prioritization of Mitigation Initiatives							
Initiative #	# of Objectives Met	Benefits	Costs	Do benefits equal or exceed costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
WC1 [(WC1)]	3	H	H	Y	Y	N	H
WC2 [(WC2)]	4	H	H	Y	Y	N	H
WC3 [(WC3)]	2	H	H	Y	Y	N	H
WC4 [(WC4)]	2	H	H	Y	Y	N	H
WC5 [WC5 (WC1)]	2	H	L	Y	Y	N	M
WC6 [WC 6 (WC4)]	2	M	L	Y	Y	Y	H
WC7 [WC7 (WC5)]	1	M	L	Y	N	Y	M
WC8 [WC8 (WC8)]	3	M	M	Y	Y	N	M
WC9 [WC9 (WC10)]	1	L	L	Y	N	Y	M
WC10 [(WC10)]	2	M	M	Y	Y	Y	H
WC11 [(WC11)]	1	M	M	Y	N	Y	M
WC12 [(WC12)]	2	M	M	Y	N	Y	M
WC13 [(WC13)]	2	L	L	Y	N	Y	H
WC14 [(WC14)]	2	M	L	Y	N	Y	H
WC15 [(WC15)]	1	M	M	Y	N	Y	M
WC16 [(WC16)]	1	M	M	Y	N	Y	M
WC17 [(WC17)]	13	M	M	Y	N	Y	H
WC18 [(WC18)]	1	H	H	Y	Y	N	H
WC19 [(WC19)]	2	H	L-M	Y	N	Y	H
WC20 [(WC20)]	13	M	M	Y	N	Y	M
WC21 [(WC21)]	1	M	L	Y	N	Y	M
WC22 [(WC22)]	1	M	L	Y	N	Y	H
WC23 [(WC23)]	2	M	L	Y	N	Y	H
WC24 [(WC24)]	4	M	L	Y	N	Y	H
WC25	1	L	L	Y	N	Y	L

Notes:

H = High; L = Low; M = Medium; N = No; Y = Yes

9.22.8.1 Explanation of Priorities

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

High Priority = A project that meets multiple objectives (i.e., multiple hazards), where potential benefits exceed the costs. High-priority projects have funding secured or are 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.

Was prioritization of initiatives based on the above definitions? Yes

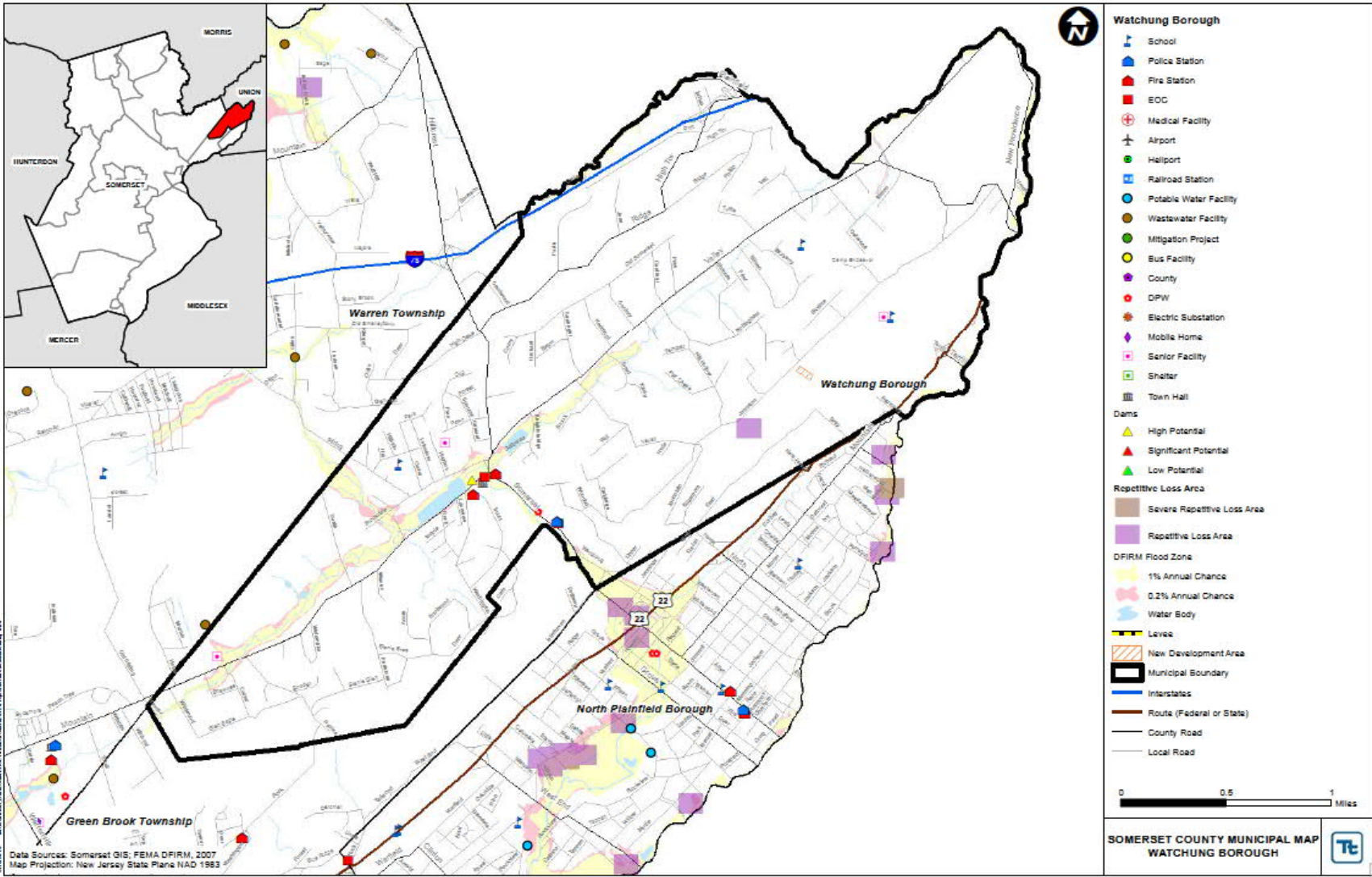
Was prioritization of initiatives based on parameters other than those stated above? Not applicable

9.22.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Watchung Borough has no additional risk vulnerabilities that need to be addressed at this time.

9.22.10 HAZARD AREA EXTENT AND LOCATION

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



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

It is the intention of Watchung Borough to incorporate mitigation planning as an integral component of daily municipal operations. The following table contains a list of planning mechanisms that have been utilized during prior plan maintenance cycles, and those that will be incorporated into municipal procedures during the upcoming plan maintenance cycle (2019-2024).

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms				
Planning Mechanisms	Reported Utilization (2009-2014)	Planned Utilization (2014-2019)	Reported Utilization (2014-2019)	Planned Utilization (2019-2024)
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 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 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	-

Status of Incorporation of Mitigation Planning into Existing and Future Planning Mechanisms				
Planning Mechanisms	Reported Utilization (2009-2014)	Planned Utilization (2014-2019)	Reported Utilization (2014-2019)	Planned Utilization (2019-2024)
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	-

9.22.12 ADDITIONAL COMMENTS

There are no additional comments at this time.

9.22.12 NFIP ADMINISTRATOR INPUT

Adoption Date of your Current Floodplain Management Ordinance	Date of Entry into NFIP ¹	Position or Title of Your Jurisdiction's Designated Floodplain Manager/Administrator (may also be called NFIP Coordinator)		Is this person a Certified Floodplain Manager?	Is floodplain management an auxiliary function?	Is your community in good standing with the NFIP?	
2002	12/04/79	Borough Engineer		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Provide an explanation of NFIP administration services (i.e., permit review, GIS, education or outreach, inspections, engineering capability, etc.):							
Permit Review; Use of Other Base Flood and Floodway Data in absence of FIRM Mapping; Obtain and Record Lowest Floor Elevation; Notify Adjacent Communities of Alteration of Watercourse and Require Maintenance; and, Interpretation of Firm Boundaries							
Describe barriers to running an effective NFIP program in the community (if applicable):							
N/A							
When was most recent FEMA Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?*	Is a CAV or CAC scheduled or needed?	Does the current floodplain management ordinance exceed FEMA or State minimum requirements? If so, describe how.	Is training of staff regarding NFIP issues planned?	Does your community intend to continue to enforce the floodplain management requirements including regulating new construction in Special Flood Hazard Areas (SFHAs)?	Does your community participate in the CRS? If so, state your Class.	Does your community intend to continue its participation in the CRS program?	If your community is not currently participating in the CRS program, are you intending to initiate the process during the next planning cycle?
N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No* * Class _____	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
*Describe any outstanding compliance issues (i.e., current violations):							
N/A							

Provide an explanation of your local floodplain permitting process:								
Does your community intend to continue floodplain identification and mapping services including any local requests for map updates?	Does your community intend to initiate/continue the buyouts of repetitive loss properties?	Does your community intend to commit staff or resources to improve local mapping or code administration in the future?	Does your community intend to provide local outreach to promote the sale of flood insurance?	Does your community intend to participate in RiskMAP meetings and planning initiatives?	Does your community intend to continue to implement structural improvements to mitigate against flooding - culverts, drainage basins, etc.?	Does your community intend to continue to implement home improvement programs designed to minimize basement flooding?	Does your community intend to continue to implement roadway improvements to reduce damage from future flooding events?	Does your community intend to implement plans and programs in coordination with a local or regional drainage/sewer authority?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does your community intend to adopt the new FEMA Advisory Base Flood Elevations?	As Floodplain Manager, did you (or your predecessor at the time) actively participate in the development of the initial Hazard Mitigation Plan?		As Floodplain Manager, are you actively participating in the development of this Hazard Mitigation Plan Update?		Have there been any changes to your community's local floodplain management program since the last version of the plan in 2014?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No			
* If you answered "yes", that there have been changes to your local program since 2009, please describe:								
Provide a description of your community assistance and monitoring activities:								
All residential and non-residential construction must obtain a Land Disturbance Permit which includes a review of plans for floodplain management./								
NFIP participating communities are required to update/revise their floodplain management ordinance to ensure that it complies with the latest FEMA regulations. Will your community continue to commit to this program requirement?				NFIP participating communities are also required to update/revise their floodplain management ordinance to be consistent with the latest FIRMs. Will your community continue to commit to this program requirement?				
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				