



## 9.16 Township of Lopatcong

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

### 9.16.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Gary Woolf, Department of Emergency Management 232 S. Third Street, Phillipsburg, NJ 08865 (908) 859-1322 <a href="mailto:wolfg@lopatcongtp.com">wolfg@lopatcongtp.com</a>	Patrick Rivoli, Department of Emergency Management 232 S. Third Street, Phillipsburg, NJ 08865 (908) 454-3165 <a href="mailto:privoli@co.warren.nj.us">privoli@co.warren.nj.us</a>

### 9.16.2 Municipal Profile

Lopatcong Township is located in southwestern Warren County and has a total land area of 7.2 square miles. According to the U.S. Census, the 2010 population for Township of Lopatcong was 8,014. The Township is bordered to the north by Harmony Township, to the south by Pohatcong Township and Phillipsburg, to the east by Greenwich Township and to the west by the Delaware River and Pennsylvania. Delaware Park and Lopatcong Overlook are unincorporated communities located in the Township. The Township is also made up of several neighborhoods, including Morris Park, Delaware Park, Rosehill Heights, Brakeley Park, Lows Hollow, Country Hills, Meadow View, Scott's Mountain, and Overlook. The major waterways that flow through the Township are Lopatcong Creek and Merrill Creek. Additionally, Lopatcong Township is located in the New Jersey Highlands Region.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in section 9.16.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.16-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address	Parcel ID(s)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2010 to Present</b>						
K & S Enterprise Trucking	Comm.	One	199 Strykers Road	Block 100, Lots 2 & 2.04	No	New Warehouse Bldg. Approved 8/25/10
Aqua New Jersey Solar Array	Comm.	One	1060 River Rd.	Block 2, Lot 47.01	No	Solar Array Approved 2011
Safeguard Power Solar Array	Comm.	One	186 Strykers Rd.	Block 99, lot 6	No	Solar Array Approved 5/23/11
Busy Bees Learning Center	Comm.	One	108 Baltimore St.	Block 62, Lots 4, 4.01 & 5	No	Learning Center for Children Approved 2012
<b>Known or Anticipated Development in the Next Five (5) Years</b>						
Sycamore Landing	Res.	247 Units	US Route 22	Block 102, Lot 3	No	Multi-Family Apts. Approved 8/23/12
Coordinated Health Medical Office Bldg.	Comm.	One Bldg. 2 Parking Lots	225 Red School Lane	Block 85, Lots 5 & 5.02	No	Office Approved 2014



**Table 9.16-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address	Parcel ID(s)	Known Hazard Zone(s)	Description/Status of Development
189 Strykers Road	Industrial	3	189 Strykers Road	Block 100, Lot 6	No	Asphalt/Concrete Plant Approved 5/23/12
Zaccheo Veterinary Clinic	Comm	2	793 Uniontown Rd.	Block 95, Lot 12.02	No	Expansion of Clinic Approved 2014

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

### 9.16.3 Natural Hazard Event History Specific to the Municipality

Warren County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community.

Information regarding specific damages at the municipal level, is presented in the table below. This summary is based on reference material or local sources. For further details on these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.16-2. Hazard Event History**

Date(s) of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
August 26 – September 5, 2011	Hurricane Irene	DR-4021	Yes	Streets closed, downed wires, Police and DPW overtime for detour traffic, collect debris for weeks. Roofing shingles and siding were damaged from private structures in the Township. There was approximately \$50,000 in losses and costs to the Township.
September 28 – October 6, 2011	Remnants of Tropical Storm Lee	DR-4039	Yes	Street closed, downed wires, Police and DPW overtime for detour traffic, collect debris. Roadways flooded and there were utility outages throughout the Township. The Township had approximately \$55,000 in losses and costs to the Township.
October 29, 2011	Severe Storm	DR-4048	Yes	Streets closed, downed wires, Police and DPW overtime for detour traffic, collect debris for weeks shelter open.
October 26 – November 8, 2012	Hurricane Sandy	DR-4086	Yes	Streets closed, downed wires, Police and DPW overtime for detour traffic, collect debris for weeks. One person was transported to a shelter in Belvidere. Many roads were closed and there were utility outages throughout. The Township had approximately \$35,000 in losses and costs to the Township.

### 9.16.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The risk ranking methodology is presented in Section 5.3. However, each municipality had the opportunity to adjust the final ranking based on municipal feedback. The following





summarizes the hazard vulnerabilities and their ranking in the Township of Lopatcong. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

**Hazard Risk/Vulnerability Risk Ranking**

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Township of Lopatcong.

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

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Dam Failure	Damage estimate not available	Rare	6	Low
Drought	Damage estimate not available	Frequent	30	Medium
Earthquake	100-Year GBS: \$0 500-Year GBS: \$320,890 2,500-Year GBS: \$4,940,356	Occasional	28	Medium
Flood	1% Annual Chance: \$834,350	Frequent	18	Medium
Geologic	RCV Exposed to Carbonate Rock Areas: \$839,839,208	Frequent	54	High
Hurricane	100-year MRP: \$284,167.00 500-year MRP: 2899568 Annualized: \$30,270.00	Frequent	48	High
Nor'Easter	Damage estimate not available	Frequent	48	High
Severe Storm	100-Year MRP: \$284,167 500-year MRP: \$2,899,568 Annualized: \$30,270	Frequent	48	High
Severe Winter Storm	1% GBS: \$5,701,263 5% GBS: \$28,506,315	Frequent	51	High
Wildfire	Estimated Value in the Extreme, Very High, and High Hazard Areas: \$14,643,650	Occasional	16	Medium
Hazardous Materials	Damage estimate not available	Frequent	36	High

Notes:

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

- a. The general building stock valuation is based on the custom inventory generated for the municipality and based on improved value.
- b. High = Total hazard priority risk ranking score of 31 and above  
Medium = Total hazard priority risk ranking of 20-30+  
Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the estimated value of contents. Loss estimates for the flood and earthquake hazards represent both structure and contents. Potential flood loss estimates were generated using Hazus-MH 2.2 and the 2011 FEMA DFIRM for the 1-percent annual chance event. For the geologic and wildfire hazards, the improved value and estimated contents of buildings located within the identified hazard zones is provided



### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Lopatcong.

Table 9.16-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Flood Boundary (3)
Township of Lopatcong	12	26	\$206,928	1	0	4

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 11/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 11/30/14.

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

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

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

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

### Critical Facilities

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

### Other Vulnerabilities Identified by Municipality

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



### 9.16.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Education/Outreach and Community classification
- Self-Assessment of Capability
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

#### Planning and Regulatory Capability

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

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

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	State / Local	Planning Board	NJSA40:55-D89 2004 Reexamination of Lopatcong Twp. Master Plan
Capital Improvements Plan	No			
Floodplain Management / Basin Plan	Yes	State / Local	Construction Code Official	Chapter 123 Flood Damage Prevention
Stormwater Management Plan	Yes, 2005	State / Local	Planning Board	Chapter 199 Stormwater Mgmt.
Open Space Plan	Yes	Local	Planning Board	2004 Open Space & Recreation update
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes	State / Local	OEM	Approved by State and Warren County OEM and Office of State Police
Emergency Response Plan	Yes	Local	OEM	Warren County OEM
Post-Disaster Recovery Plan	Yes	Local	OEM	Warren County OEM
Transportation Plan	No			
Strategic Recovery Planning Report	No			
Other Plans:				
<b>Regulatory Capability</b>				



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

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Building Code	Yes	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes, 2012	Local	Planning Board	Chapter 243 Zoning and Land Use
Subdivision Ordinance	Yes, 2012		Planning Board	Chapter 243 Zoning and Land Use
NFIP Flood Damage Prevention Ordinance	Yes, 2011	Federal, State, Local	CONSTRUCTION CODE OFFICIAL	Chapter 123 Flood Damage Prevention
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State, Local	Engineer	N.J.A.C 7:13 Flood Hazard Area Control Act
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes, 2012	Local	Planning Board	CHAPTER 243 ZONING & LAND USE
Stormwater Management Ordinance	Yes, 2006	Local	Planning Board	CHAPTER 199 STORMWATER MGMT.
Municipal Separate Storm Sewer System (MS4)	Yes, 2006	Local	Township Engineer, Planning Board	CHAPTER 183: SEWERS – PART OF 2006 STORMWATER MGMT. PLAN
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes 2012	Local	Planning Board, Construction Official	CHAPTERS 243, 81, 123, 128, 145, 179, 195 & 203 MUN. CODE

**Administrative and Technical Capability**

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

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

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	PLANNING NJSA 40:55D
Mitigation Planning Committee	Yes	MITIGATION PLANNING TEAM
Environmental Board/Commission	Yes	PLANNING CHAPTER 23 MUN. CODE
Open Space Board/Committee	Yes	PLANNING





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

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Economic Development Commission/Committee	Yes	GOVERNING BODY
Maintenance Programs to Reduce Risk	Yes	SWEEP STREETS/CLEAN OUTS/SEWER/DPW
Mutual Aid Agreements	Yes	POLICE, FIRE
<b>Technical/Staffing Capability</b>		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	PLANNER GEORGE RITTER – RUGGERIO PLANTE, ENGINEER PAUL STERBENZ – MASER CONSULTING
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	MASER CONSULTING
Planners or engineers with an understanding of natural hazards	Yes	PLANNER GEORGE RITTER, CONSTRUCTION OFFICIAL, ENGINEER PAUL STERBENZ
NFIP Floodplain Administrator	Yes	JOHN FRITTS
Surveyor(s)	Yes	ENGINEER'S OFFICE – COUNCIL
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	RUGGERIO PLANTE LAND DESIGN
Scientist familiar with natural hazards	Yes	ENGINEER – COUNCIL
Emergency Manager	Yes	CONSTRUCTION OFFICIAL/ENGINEER/COUNCIL
Grant Writer(s)	Yes	CONSTRUCTION OFFICIAL/ENGINEER/COUNCIL
Staff with expertise or training in benefit/cost analysis	Yes	
Professionals trained in conducting damage assessments	Yes	BLDG. INSPECTOR

**Fiscal Capability**

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

**Table 9.16-7. Fiscal Capabilities**

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



### Education/Outreach and Community Classifications

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

**Table 9.16-8. Education/Outreach and Community Classifications**

Program	Do you have/participate in this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No		
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	2015
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes		
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	Yes	N/A	Annual
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes	N/A	N/A
Public-Private Partnerships	No		

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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





**Table 9.16-9. Self-Assessment of Capability**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and Regulatory Capability			X
Administrative and Technical Capability		X	
Fiscal Capability	X NOT AWARE OF FUNDING SOURCES		
Community Political Capability		X	
Community Resiliency Capability		X	
Capability to Integrate Mitigation into Municipal Processes and Activities.	X LIMITED STAFF		

**National Flood Insurance Program**

**NFIP Floodplain Administrator (FPA)**

John Fritts is the FPA for the Township of Lopatcong.

**Flood Vulnerability Summary**

The Township maintains lists/inventories of properties that have been damaged by flooding. During Sandy, damages to structures included roof and siding as a result of wind. If properties are interested in mitigation, funding would be provided by the property owner, flood insurance and ICC grant funding.

**Resources**

NFIP administration services and functions provided by the FPA include permits and inspections. The Township currently does not provide education or outreach to the community regarding flood hazards/risk or flood risk reduction. Barriers to running an effective floodplain management program include limited staff and funding. The FPA feels adequately supported and trained to fulfill his role as the municipal FPA and he would consider attending continuing education and/or certification training if offered.

**Compliance History**

The Township is currently in good standing with the NFIP.

**Regulatory**

The Township's floodplain management regulations and ordinances do not exceed the FEMA and state minimum requirements. Chapter 123 of the municipal code, flood damage prevention ordinance, is in accordance with a model ordinance provided by the State of New Jersey in 2011. Chapter 160 of the Township Code, land use code, restricts development in certain areas such as floodplains, steep slopes, etc. The zoning and planning boards consider efforts to reducing flood risk when reviewing variances.

**Community Rating System**

The Township of Lopatcong does not participate in the Community Rating System (CRS) program. The Township has considered joining CRS and would attend a seminar on the program if offered.





## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

Lopatcong Township in Warren County has 1,049 acres in the Preservation Area and 3,672 acres in the Planning Area of the Highlands Region. The municipality submitted a Petition for Plan Conformance for both areas, which was approved by the Highlands Council on March 17, 2011. The municipality later submitted an amended Petition incorporating a Highlands Center Designation into its Planning Area lands. The amended Petition was approved by Council on January 19, 2012. The Highlands Master Plan Element for the Township was revised and the goals of their plan include:

- Set aside specified areas intended to be Preserved Open Space and other areas within the Highlands Center that are essential to the protection of critical Highlands Environmental Resources, including:
  - The area designated as a Highlands Environmental Resource Site (located on Lopatcong Creek between Pudding Stone Way and Buckley Hill Drive); and
  - The Morris Canal and associated riparian area of Lopatcong Creek
- Provide for areas of infill development and redevelopment that are both consistent with available water supply and wastewater treatment capacities, and designed in accordance with center-based, smart growth development standards;
- Utilize appropriate development for the industrial area that is consistent with available utility capacity; and
- Maintain applicability of the Highlands resource protection standards and requirements in the Highlands Land Use Ordinance to the maximum extent that is compatible with center-based development patterns.

These modifications will, in large part, supplant the density and intensity of development provisions currently included in Lopatcong's Highlands Element, specifically with respect to the proposed Lopatcong Township Highlands Center, and will be highly dependent upon the completion of an approved Lopatcong Township WMP that is reflective of capacity conditions existing at the multi-municipal Phillipsburg Sewerage Treatment Plant (STP).

The 2005 Stormwater Management Plan was adopted as a means to reduce the impacts on public health and the infrastructure by flooding caused by stormwater runoff, as well as increased soil erosion and nonpoint source pollution. Mitigation actions include changes to existing ordinances and adoption of new ordinances. All new development must be able to manage any increases in stormwater runoff on-site; mitigation projects off-site will not be permitted as a replacement.

The Township's Master Plan incorporate hazard risk and mitigation. However, they do not have a transportation plan or a Continuity of Operations (COOP) plan.

Plans/practices in place in the Township protect natural resources, such as resources. This is a state regulation.



### Regulatory and Enforcement (Ordinances)

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The Township has multiple ordinances pertaining to the mitigation of hazards. These ordinances include the NFIP Flood Damage Prevention Ordinance, a stormwater management ordinance, and a snow and ice removal ordinance. Hazard mitigation is a priority when it comes time to update these and other Township ordinances.

**Chapter 135: Highlands Area Exemptions** - the purpose of this ordinance is to set forth the procedural and substantive requirements by which the municipality will issue Highlands Act Exemption Determinations. Such determinations pertain only to Highlands Act Exemptions 1, 2, 4, 5, 6, 7 and 8. Highlands Act Exemption Determinations indicate whether proposed activities, improvements or development projects affecting lands located within the Township Highlands Area are exempt from the Highlands Water Protection and Planning Act ("Highlands Act," N.J.S.A. 13:20-1 et seq.), and are therefore exempt from the Highlands Water Protection and Planning Council's ("Highlands Council") Regional Master Plan, the New Jersey Department of Environmental Protection's (NJDEP) Highlands Water Protection and Planning Act Rules ("Preservation Area Rules," N.J.A.C. 7:38-1 et seq.), and from any amendments to the Township's Master Plan, development regulations, or other regulations adopted pursuant to the approval of the Township's Petition for Plan Conformance by the Highlands Council.

Prior to land use, zoning changes or development permitting in the municipality, the Township reviews the hazard mitigation plan and other hazard analysis to ensure consistent and compatible land use. The Township encourages consideration of low occupancy, low-density zoning in hazard areas when practical. The Township also limits development in high hazard areas. The permit review process of the Township address hazards of concern. Hazard resistant construction standards are incorporated into the design and location of projects. Rezoning procedures in the Township recognizes hazard areas as limits on zoning changes.

### Operational and Administration

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The Township has established an Environmental Commission and Shade Tree Commission that aid in planning decisions to support the conservation and preservation of the Township's critical environmental features. Hazard mitigation actions are incorporated into daily operations in the Township such as the Open Space Trust Fund and outreach activities described below.

### Funding

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The Township established an Open Space Trust Fund of 3 cents per \$100 of assessed value. The Township's municipal/operating budget does not have a line item for project funding; however, mitigation actions will be looked at when allocating funding in the future. Additionally, the capital improvement budget does not have a line item for mitigation project funding, but funding has been provided for mitigation projects identified in the hazard mitigation plan.

### Education and Outreach

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The Township provides community information and advisories regarding emergency events on its website's homepage. The Township also has a Facebook and Twitter page that is used to provide residents with similar information. The Township does provide training on hazard identification, conducts outreach on hazards and provides other training related to hazard mitigation.



### 9.16.6 Mitigation Strategy and Prioritization

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

#### Past Mitigation Initiative Status

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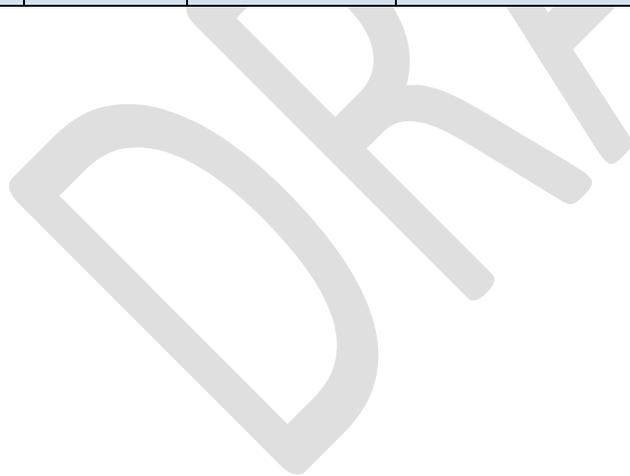
The following table indicates progress on the community's mitigation strategy identified in the 2011 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.

DRAFT



Table 9.16-10. Past Mitigation Initiative Status

2011 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g, FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2016 HMP? or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2016 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why
Flood-proofing of the Lopatcong Recreational Facility.	Twp Engineer	No Progress	1. Not Needed	Discontinue	1. Discontinue – property is not located in the floodplain.
Storm-water management system upgrade and improvement along Belleview Dairy Road and Fox Farm Road.	Twp Engineer	No Progress	1. Lack of Funding	Discontinue	1. Discontinue – The road was repaired in 2011 as a result of damage from Hurricane Irene. There are no stormwater management system upgrades planned at this time.
Conduct all hazards public education and outreach program for hazard mitigation and preparedness.	WCOEM, Twp OEM	In Progress	1. On-going effort	Include in 2016 HMP	1. This is an on-going effort in the Township. Refer to Lopatcong-2 in Table 9.16-10.





### **Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy**

There are no additional mitigation projects/activities identified that have also been completed but were not identified in the previous mitigation strategy in the 2011 Plan.

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

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

Table 9.16-11 summarizes the comprehensive-range of specific mitigation initiatives the Borough would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number. Table 9.16-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



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

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
Lopatcong Twp-1	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/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 and determine most cost-effective mitigation option. Phase 2: Work with the property owners to implement selected action based on available funding and local match availability.											
	See above.	Existing	Flood, Severe Weather Wildfire, Severe Winter Weather	1,2	Administrator, NFIP FPA with WC OEM, NJOEM, FEMA support	High	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Ongoing (outreach and specific project identification); Long term DOF (specific project application and implementation)	High	SIP	PP
Lopatcong Twp-2	Conduct all hazards public education and outreach program for hazard mitigation and preparedness.	Both	All	1, 2, 3, 4	Township OEM, Township Administrator	High	Low	Local	Short (DOF)	High	EAP	PI
Lopatcong Twp-3	Utilize the HMP when updating the Master Plan	Both	All	4, 5	Township Planner	High	Low	Local	Short (DOF)	High	LPR	PR

**Notes:**

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

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

**Acronyms and Abbreviations:**

CRS	Community Rating System	N/A	Not applicable
DPW	Department of Public Works	NFIP	National Flood Insurance Program
FEMA	Federal Emergency Management Agency	NJDEP	New Jersey Department of Environmental Protection
FPA	Floodplain Administrator	NJOEM	New Jersey Office of Emergency Management
HMA	Hazard Mitigation Assistance	OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
HMA	Hazard Mitigation Assistance Program

**Timeline:**

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

**Costs:**

Where actual project costs have been reasonably estimated:  
Low < \$10,000

**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:





Costs:

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:

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

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

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

Mitigation Category:

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

CRS Category:

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





Table 9.16-12. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Lopatcong Twp-1	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable.	1	1	1	1	1	1	0	0	1	0	1	1	0	0	9	High
Lopatcong Twp-2	Conduct all hazards public education and outreach program for hazard mitigation and preparedness.	1	1	1	1	1	1	0	0	1	1	1	1	0	0	10	High
Lopatcong Twp-3	Utilize the HMP when updating the Master Plan	1	1	1	1	1	1	0	0	1	1	1	1	0	0	10	High

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





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

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None at this time.

### 9.16.8 Hazard Area Extent and Location

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Hazard area extent and location maps have been generated for the Township of Lopatcong that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Lopatcong has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### 9.16.9 Additional Comments

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None at this time.

DRAFT



Figure 9.16-1. Township of Lopatcong Hazard Area Extent and Location Map 1

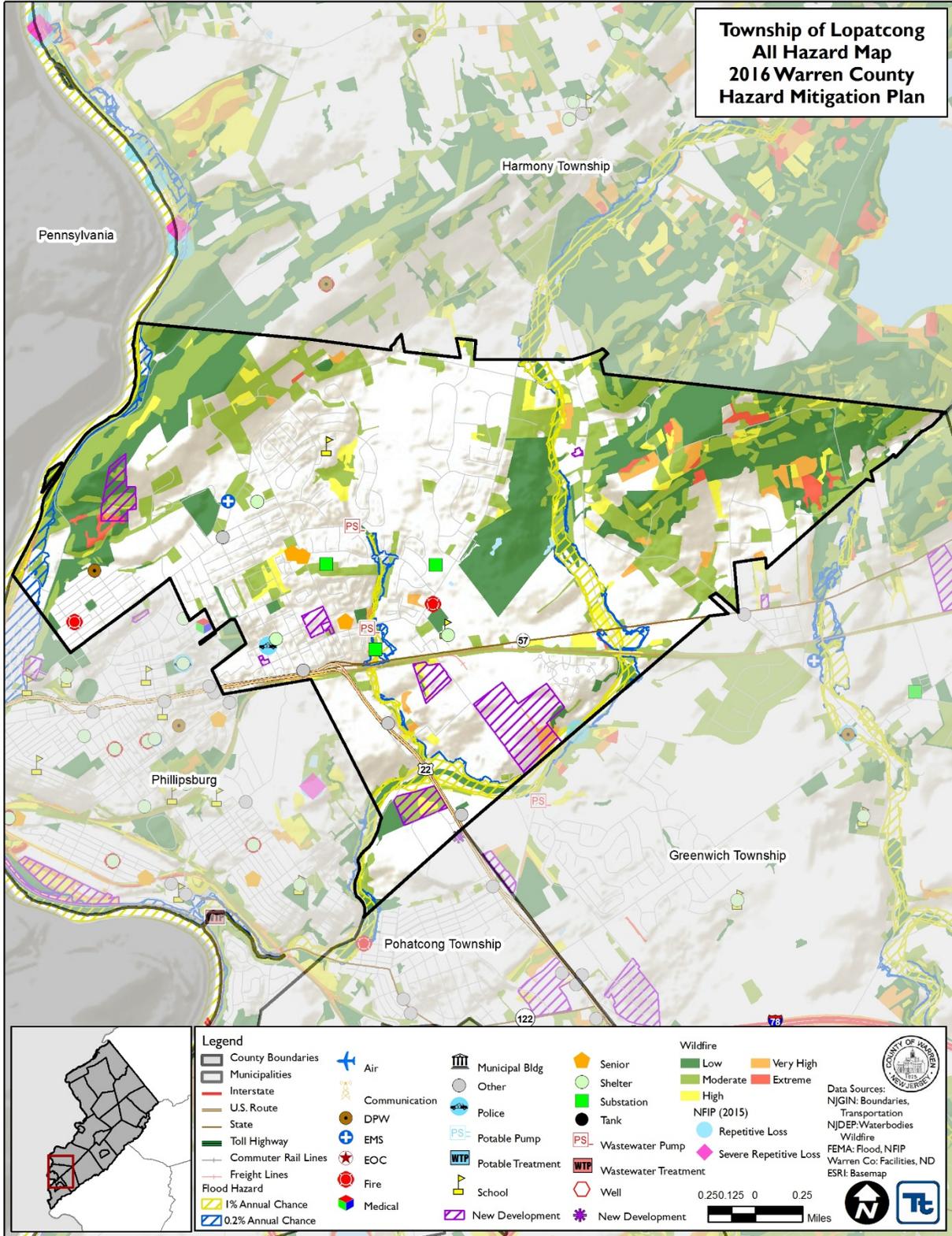
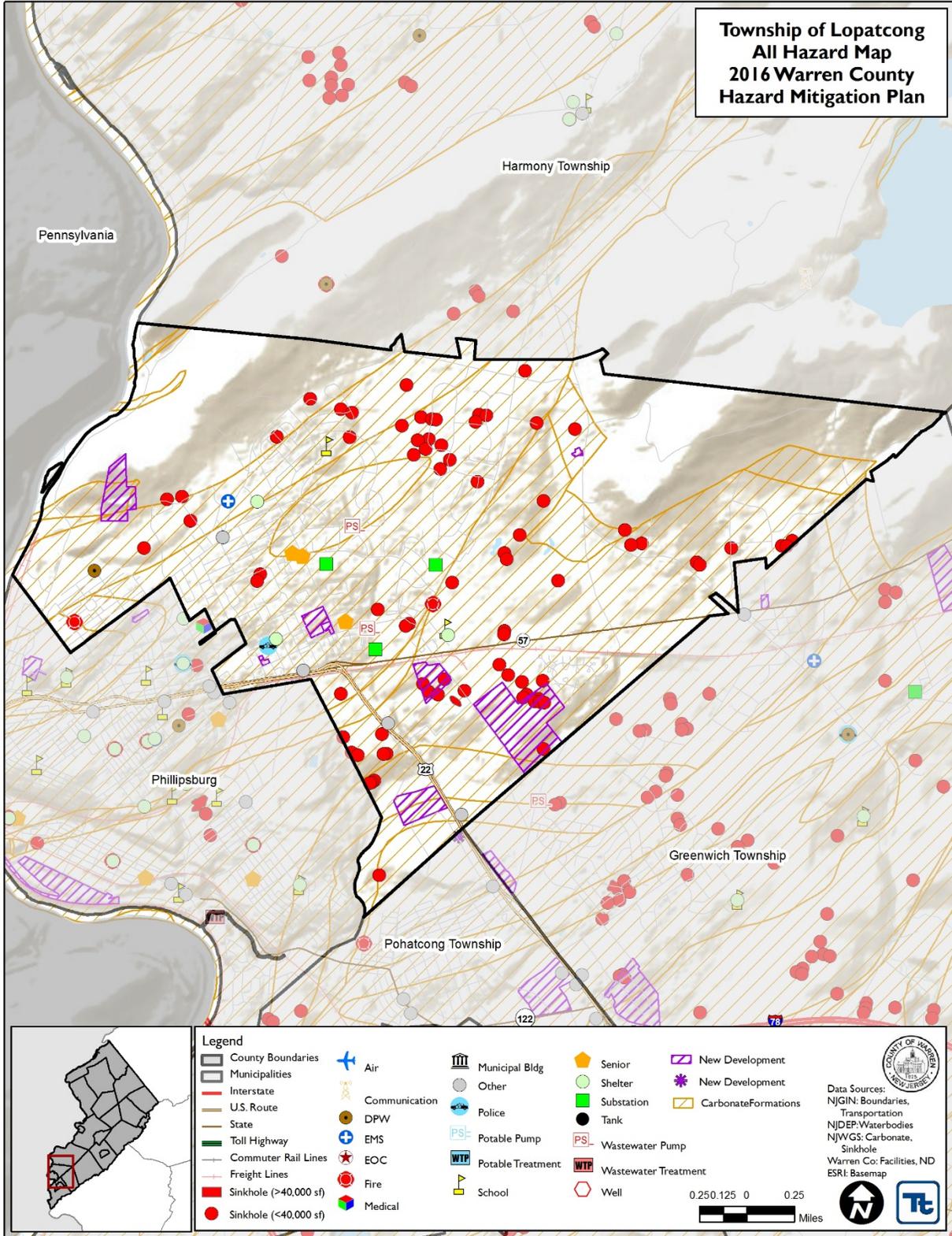




Figure 9.16-2. Township of Lopatcong Hazard Area Extent and Location Map 2





**Action Number:** Lopatcong Twp – 1

**Mitigation Action/Initiative:** Support the mitigation of vulnerable structures

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, Severe Weather, Hurricane/Tropical Storm, Nor'Easter
<b>Specific problem being mitigated:</b>	Properties have experienced historic flood damages
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Elevate structures
	2. Acquire structures
	3. Do Nothing
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	1, 2
<b>Applies to existing and/or new development; or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible/Lead Agency/Department</b>	Township Administrator; Support from Warren County OEM, State OEM
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	FEMA HMA programs; Local match
<b>Timeline for Completion</b>	Short; depends on available funding
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



**Action Number:** Lopatcong Twp -1

**Mitigation Action/Initiative:** Support the mitigation of vulnerable structures

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	FEMA funding will be needed to implement this action
Environmental	0	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	9	
<b>Priority (High/Med/Low)</b>	<b>High</b>	