

## 9.12 LOWER MILFORD TOWNSHIP

This section presents the jurisdictional annex for Lower Milford Township.

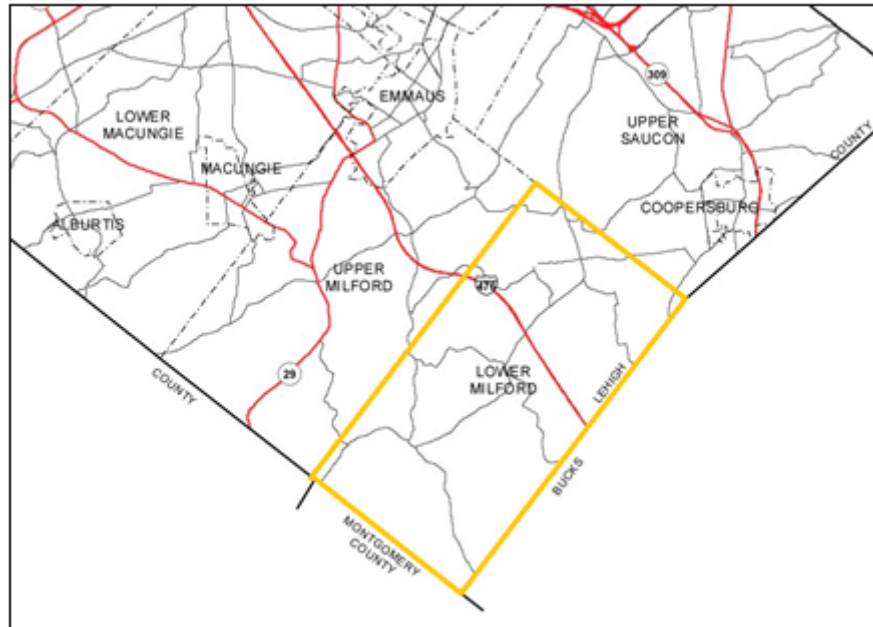
### A. HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact		Alternate Point of Contact	
<u>Name</u>	Ellen Koplin	<u>Name</u>	Richard Kinsey
<u>Title</u>	Township Manager	<u>Title</u>	Public Works Director
<u>Address</u>	7607 Chestnut Hill Church Road, Coopersburg, PA 18036	<u>Address</u>	Same
<u>Telephone</u>	610-967-4949 Ext 101	<u>Telephone</u>	610-967-4949 Ext. 112
<u>Fax</u>	610-967-1013	<u>Email</u>	<a href="mailto:rkinsey@lowermilford.net">rkinsey@lowermilford.net</a>
<u>Email</u>	<a href="mailto:ekoplin@lowermilford.net">ekoplin@lowermilford.net</a>		

### B. MUNICIPAL PROFILE

Lower Milford Township is located in the southern-most corner of Lehigh County, on the border with Bucks County to the southeast and Montgomery County to the southwest. Lower Milford consists mainly of agricultural land, and has a population of 3,775 (2010 Census). As shown in Figure 1, it is also bordered by Lehigh County neighbors Upper Milford and Upper Saucon Townships to the northwest and northeast, respectively. The township's total area of 19.6 square miles includes the villages of Dillingsville; Hosensack; Kraussdale; and Limeport.

**Figure 1**



(Source: <http://www.lvpc.org/pdf/maps/baseMap-LehighNorthamptonCounties.pdf>)

The PA Turnpike Northeast Extension (Route 476) runs southeast-northwest through Lower Milford. The township's major roads are Church View Road/Beverly Hills Road, Kings Highway, Limeport Pike, Palm Road, and Spinnerstown Road (which connects it with Route 663 and the Quakertown Interchange of Interstate 476 just over the Bucks County line.)

Waterways in Lower Milford include Saucon Creek and Perkiomen Creek, all of which are located within the Delaware watershed. The Saucon Creek begins in Lower Milford and partially drains into the Lehigh River. The township is the source of three tributary creeks of the Perkiomen Creek, which drains to the Schuylkill River: Hosensack Creek (which starts near the source of the Saucon,) Unami Creek, and Macoby Creek.

### B.1 Known or Anticipated Future Development

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) to ten (10) years in the municipality. Refer to the map in Section I of this annex which illustrates the hazard areas along with the location of potential new development.

Property Name	Type (Residential or Commercial)	Number of Structures	Location	Known Hazard Zone*	Description / Status
Maplewood Estates	Residential	54	Church View and Chestnut Hill Ch Roads	Some parcels on Church View Road in this area lie in the NFIP SFHA	Approved Subdivision

\* Only location-specific hazard zones or vulnerabilities identified. With the exception of flood, wildfire, landslides, and land subsidence/sinkholes, all locations within the Lehigh Valley are exposed to the natural hazards addressed in this plan.

### C. NATURAL HAZARD EVENT HISTORY SPECIFIC TO LOWER MILFORD TOWNSHIP

Type of Event and Date	FEMA Disaster # (if applicable)	Local Damage and Losses
Hurricane Irene August 2011	DR-4025; EM-3339	Road and Drainage Infrastructure Damage Wind Damage
Hurricane Floyd September 1999		Flooding and Wind Damage

**D. HAZARD RISK/VULNERABILITY RISK RANKING**

The following relative ranking of natural and non-natural hazard risks in this municipality was developed using PEMA's Risk Factor methodology described in Section 4, "Risk Assessment"

HAZARD RISK	NATURAL HAZARDS	RISK ASSESSMENT CATEGORY					RISK FACTOR (RF)
		PROBABILITY	IMPACT	SPATIAL EXTENT	WARNING TIME	DURATION	
HIGH	Winter Storm	3	2	4	1	3	2.7
	Flood	3	2	2	3	3	2.5
MODERATE	Radon Exposure	4	1	2	1	4	2.4
	Extreme Temperatures	4	1	2	1	3	2.3
	Drought	2	1	4	1	4	2.2
	Wildfire	3	1	2	3	3	2.2
	Hailstorm	3	1	3	2	1	2.1
	Wind, incl. Tornado	1	3	2	4	1	2.1
	Lightning	4	1	1	2	1	2
LOW	Earthquake	1	1	4	4	1	1.9
	Subsidence / Sinkholes	2	1	1	2	1	1.4
	Landslide	1	1	1	4	1	1.3

HAZARD RISK	MAN-MADE HAZARDS	RISK ASSESSMENT CATEGORY					RISK FACTOR (RF)
		PROBABILITY	IMPACT	SPATIAL EXTENT	WARNING TIME	DURATION	
HIGH	Fire (Urban/Structural)	4	2	1	4	2	2.6
	Environmental Hazard and	3	2	2	4	3	2.6
	Utility Interruption	3	1	3	4	3	2.5
MODERATE	Transportation Accident	4	1	1	4	1	2.2
	Dam Failure	1	3	2	4	2	2.2
	Mass Gathering and Civil Disturbance	3	1	1	4	2	2
LOW	Terrorism	1	3	1	4	1	1.9
	Building Collapse	1	3	1	4	1	1.9
	Nuclear Incident	1	1	1	4	2	1.4
	Levee Failure	0	0	0	0	0	0

### **E. CAPABILITY ASSESSMENT**

This section identifies the following capabilities of the local jurisdiction:

- Planning and Regulatory Capability
- Administrative and Technical Capability
- Fiscal Capability
- Community Classifications

## E.1 Planning and Regulatory Capability

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Hazard Mitigation Plan	X	7/18/2006		Lehigh County EMA	0	+	Updating 2012
Emergency Operations Plan	X	2007		EMC	0	+	
Disaster Recovery Plan	X			EMC	0	+	See EOP
Evacuation Plan	X			EMC	0	+	See EOP
Continuity of Operations Plan	X			EMC	0	+	See EOP
NFIP	X	11/2009			0	+	
NFIP – Community Rating System	X	11/2009			0	+	
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	X	12/13/2001		Zoning Dept.	0	+	
Floodplain Management Plan	X	12/13/2001		Zoning Dept.	0	+	
Zoning Regulations	X	7/20/2009		Zoning Dept.	+	+	
Subdivision Regulations	X	7/16/1997		Zoning Dept.	+	+	
Comprehensive Land Use Plan	X	5/19/2005		Municipality (plan prepared by the Southwestern Lehigh County Comprehensive Plan Committee)	+		Multi-Municipal Plan. Includes recommendations on the adoption of carbonate bedrock standards.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Open Space Management Plan (or Parks/Rec or Greenways Plan)	X	2008			+		Multi-Municipal Plan
Stormwater Management Plan / Ordinance	X	10/21/2010, 4/19/2007		Twp. Engineer	+		Ordinance 119 Ordinance 104
Natural Resource Protection Plan	X			Zoning Dept.	+		See Zoning Ordinance
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan	X			Zoning Dept.	+		See Zoning Ordinance – Zoning Regulations In Place
Farmland Preservation	X			Lehigh County Agricultural Land Pres.	+		
Building Code	X	5/2004		Township Engineer	+		Ordinance 97
Fire Code				Township Engineer	+		See Building Code
Firewise	X	6/19/2008			+		
Storm Ready	X	1/2/2007		Public Works	+		Lower Milford Winter Maintenance Plan
Other	X	7/2010		PC	+		PD Licensed QRS EMS

**E.2 Administrative and Technical Capability**

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	X		Planning Commission	Planning Administrator oversees
Planners or engineers (with natural and/or human caused hazards knowledge)	X		Township Engineer	
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		Township Engineers	
Emergency Manager	X		EMC/Township Manager	
NFIP Floodplain Administrator	X		Zoning Officer	
Land Surveyors	X		Township Engineer	
Scientists or staff familiar with the hazards of the community	X		Township Manager, Police, Public Works	
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program	X		Township Engineer	
Grant writers or fiscal staff to handle large/complex grants	X		Township Manager	
Staff with expertise or training in Benefit-Cost Analysis	X		Board of Supervisors, Township Manager	
Other				



**E.3 Fiscal Capability**

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming		X		
Community Development Block Grants (CDBG)		X		
Special Purpose Taxes	X		Township Manager	Fire Tax
Gas / Electric Utility Fees		X		
Water / Sewer Fees	X		Township Manager	Limited Sewerage Area
Stormwater Utility Fees		X		
Development Impact Fees		X		
General Obligation, Revenue, and/or Special Tax Bonds		X		
Partnering Arrangements or Intergovernmental Agreements	X		Planning Commission, Board of Supervisors	
Other				

## E.4 Community Classifications

Program	Classification	Date Classified
Community Rating System (CRS)	NP	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	TBD	TBD
Public Protection	TBD	TBD
Storm Ready	Lehigh County	01/12
Firewise	NP	N/A

N/A = Not applicable. NP = Not participating. TBD = To Be Determined.

The classifications listed above relate to the community's effectiveness in providing services that may impact 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 one (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. Storm Ready communities are better prepared to save lives from the onslaught of severe weather through advanced planning, education and awareness.

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/>

## F. MITIGATION STRATEGY

### F.1 Past Mitigation Activities/Efforts

- Storm drainage projects on Shupps Lane, Plover Lane, Standard Lane, East Mill Hill and Orchard Roads
- Stormwater ordinances enacted
- Floodplain ordinance enacted
- Streambank stabilization project pending for Schultz Bridge Road at intersection of Buhman Road.

## F.2 Hazard Vulnerabilities Identified

It is estimated that in Lower Milford Township, 104 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 6.3% is located within the 1% annual chance flood area. \$15,193,448 (2.8%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

There are 7 NFIP policies in the community. While there are 41 structures located within the 1% annual chance flood area, there are only 3 policies issued to property owners in the 1% annual chance flood area. FEMA has identified no Repetitive Loss (RL) or Severe Repetitive Loss (SRL) properties in the municipality. HAZUS-MH estimates that for a 1% annual chance flood, \$801,315 (.1%) of the municipality's general building stock replacement cost value (structure and contents) will be damaged, 191 people may be displaced, 32 people may seek short-term sheltering, and an estimated 490 tons of debris could be generated.

HAZUS-MH estimates the following damage and loss of use to critical facilities in the community as a result of a 1% annual chance flood event:

Critical Facilities Located in the DFIRM 1% and 0.2% Flood Boundaries and Estimated Potential Damage from the 1% Flood Event

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Structure Damage	Content Damages	Days to 100-Percent Functional
Lower Milford Township Fire Company 1	Fire	X	X	1.1	1.2	1.1

Source: FEMA, 2004; FEMA, 2011; HAZUS-MH 2.1

Notes:

X = indicates the facility location as provided by Lehigh Valley is located in the DFIRM flood zone.

NA = HAZUS-MH 2.1 does not estimate the days to 100-percent functional for user-defined facilities.

- = There is no damage estimate either because the 0.2% annual chance flood event potential loss estimates were not run in HAZUS or HAZUS did not calculate potential loss estimates for some facilities located in the DFIRM flood hazard zone. This is because even though these facilities are located within the boundary of the flood depth grid generated by HAZUS the depth of flooding does not amount to any damages to the structure or contents according to the depth damage function used in HAZUS.

The following vulnerabilities have been identified by the community, within the risk assessment, or in other documents (e.g. FEMA Flood Insurance Studies, Act 167 Stormwater Management Plans):

### Flooding

- 3800 Block Limeport Pike southbound, ponding during heavy rains, no drainage
- Limeport Pike culvert at intersection of Dillingersville Road
- School House Lane/Spring Road
- West Mill Hill and Yeakel Roads
- Schultz Bridge Road at intersection of Buhman Road – Severe erosion and flooding
- Spinnerstown Road stormwater facility at School House Lane
- Spinnerstown Road stream crossing culvert (between Plover Lane and Orchard Road)
- Limeport Pike between Spring Road and Milky Way

Please refer to the Hazard Profiles for additional vulnerability information relevant to this jurisdiction.



### F.3 Hazard Mitigation Strategy

Note some of the identified mitigation initiatives in Table F 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.

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority (H/M/L)	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
1	Shultz Bridge Road Streambank Stabilization - Severe stream bank erosion, which could lead to undermining the roadway	Property Protection; Structural Projects; Natural Resource Protection	Flood	High	Medium	Pending – LPDM 2008 Funding	Municipality (via Municipal Engineer) with support from Lehigh County EMA, PEMA, FEMA	Short Term DOF	Existing
2	Replacement of culvert at the intersection of Limeport Pike and Dillingersville Road which leads to roadway flooding	Structural Projects	Flood	Medium	High	Federal, State, County Funding	PennDOT	Short Term DOF	Existing
3	Replacement of Culvert on Spinnerstown Road (between Plover Lane and Orchard Road) which leads to roadway flooding	Structural Projects	Flood	Medium	High	Federal, State, County Funding	PennDOT	Short Term DOF	Existing
4	Drainage System in the 3800 Block of Limeport Pike – Southbound: Roadway Flooding, Ponding during heavy rains, no drainage	Structural Projects	Flood	Medium	Medium	Federal, State, County Funding	PennDOT	Short Term DOF	Existing
5	Stormwater Facility in the area of Spinnerstown Road and School House Lane leading to roadway flooding	Structural Projects	Flood	Medium	High	Federal, State, County Funding	PennDOT	Short Term DOF	Existing
6	School House Lane/Spring Road – Roadway flooding	Structural Projects	Flood	High	High	HMGP	Public Works	Short Term DOF	Existing

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority (H/M/L)	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	Elevate Road, install drainage structure								
7	West Mill Hill and Yeakel Roads– Roadway flooding Elevate Road, install drainage structure	Structural Projects	Flood	High	High	RFC Grant Program	Public Works	Short Term DOF	Existing
8	Limeport Pike between Spring Road and Milky Way– Roadway flooding Elevate Road, install drainage structure	Structural Projects	Flood	Medium	High	Federal, State, County Funding	PennDot	Short Term DOF	Existing
9	Funds to maintain and purchase new equipment, which would be utilized to assist in emergency response	Emergency Services	All Hazards	Medium	Medium	FMA Grant Program	Municipal	On-going	New and Existing
10	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.  Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions	Property Protection	Flood	High	Low - Medium	Municipal Budget	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, ISO, FEMA	On-going	New & Existing

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority (H/M/L)	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	identified as Initiatives 11 – 16 (below).								
11	<p>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 effectively reduce risk to natural hazard:</p> <ul style="list-style-type: none"> <li>• Provide and maintain links to the HMP website, and regularly post notices municipal homepage(s) referencing the HMP webpages.</li> <li>• 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.</li> <li>• Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.</li> </ul>								
	See above.	Public Education and Awareness	All Hazards	High	Low-Medium	Municipal Budget	Municipality with support from Planning Partners, PEMA, FEMA	Short Term	N/A
12	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements) and sinkhole risk (e.g. carbonate bedrock standards).	Prevention	Flood; Subsidence / Sinkholes	High	Low	Municipal Budget	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA. LVPC for Carbonate Bedrock Standard model ordinance.	Short Term	New & Existing
13	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed.	Prevention, Property Protection	Flood	Medium	Low	Municipal Budget	NFIP Floodplain Administrator with support from PADEP, PEMA, FEMA	Short Term	N/A
14	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the	Public Education and Awareness	Flood	High	Low	Municipal Budget	NFIP Floodplain Administrator	Short Term DOF	N/A

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority (H/M/L)	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.								
15	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the community's current compliance with the NFIP is established.	Prevention, Property Protection, Public Education and Awareness	Flood	Medium	Low	Municipal Budget	NFIP Floodplain Administrator with support from PADEP, PEMA, FEMA	Short Term	NA
16	Archive elevation certificates	Public Education and Awareness	Flood	High	Low	Municipal Budget	NFIP Floodplain Administrator	On-going	NA
17	Continue to support the implementation, monitoring, maintenance, and updating of this , as defined in Section 7.0	All Categories	All Hazards	High	Low – High (for 5-year update)	Municipal Budget, possibly FEMA Mitigation Grant Funding for 5-year update	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), PEMA	On-going	New & Existing
18	Complete the ongoing	Emergency	All Hazards	High	Low	Municipal	Municipality	On-going	New &

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority (H/M/L)	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	updates of the Comprehensive Emergency Management Plans	Services				Budget	with support from PEMA		Existing
19	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations.	Emergency Services	All Hazards	High	Low	Municipal Budget	Municipality with support from Surrounding municipalities and County	On-going	New & Existing
20	Identify and develop agreements with entities that can provide support with FEMA/PEMA paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/PEMA paperwork compilation, submissions, record-keeping	Public Education and Awareness, Emergency Services	All Hazards	Medium	Medium	Municipal budget	Municipality with support from County, PEMA, FEMA	Short Term	NA
21	Work with regional agencies (i.e. County and PEMA) 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).	Public Education and Awareness, Emergency Services	All Hazards	Medium	Medium	Municipal budget, FEMA HMA and HLS grant programs	Municipality with support from County, PEMA	Short Term DOF	NA

Notes:

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

**Costs:**



Where actual project costs have been reasonably estimated:

Low = < \$10,000

Medium = \$10,000 to \$100,000

High = > \$100,000

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

Low = Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.

Medium = Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.

High = Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

**Potential FEMA HMA Funding Sources:**

PDM = Pre-Disaster Mitigation Grant Program

FMA = Flood Mitigation Assistance Grant Program

RFC = Repetitive Flood Claims Grant Program

SRL = Severe Repetitive Loss Grant Program

HMGP = Hazard Mitigation Grant Program

**Timeline:**

Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.

DOF = Depending on funding.

### G. ANALYSIS OF MITIGATION ACTIONS

Municipal mitigation actions were evaluated and prioritized primarily using the PA STEEL methodology discussed in Section 6 of this plan. Per the cost-benefit weighted PA STEEL methodology, those actions receiving 20 or more favorable ratings were generally considered high-priority actions. However, other factors beyond the PA STEEL numeric ranking may have been considered by the municipality during project prioritization. For example, a project might be assigned a medium priority because of the uncertainty of a funding source, and could be changed to high once a funding source has been identified such as a grant.

Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results				
		(+) Favorable					(-) Less favorable					(N) Not Applicable														
		P Political			A Administrative				S Social		T Technical			E Economic			E Environmental				L Legal			SUMMARY (EQUAL WEIGHTING)	SUMMARY (BENEFITS & COSTS PRIORITIZED)	
Political Support	Local Champion	Public Support	Staffing	Funding Allocation	Maintenance / Operations	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Benefit of Action (x3)	Cost of Action (x3)	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Site	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
1	Shultz Bridge Road Streambank Stabilization	+	+	+	+	-	+	+	+	+	+	N	+	+	N	+	-	-	N	-	+	N	+	-	14(+) 5(-) 4(N)	18(+) 5(-) 4(N)
2	Replace culvert at the intersection of Limeport Pike and Dillingersville	+	+	+	N	N	N	+	+	+	+	N	N	N	N	N	-	-	N	-	+	+	N	N	9(+) 3(-) 11(N)	9(+) 3(-) 11(N)
3	Replacement of Culvert on Spinnerstown	+	+	+	N	N	N	+	+	+	+	N	N	N	N	N	-	-	N	-	+	+	N	N	9(+) 3(-) 11(N)	9(+) 3(-) 11(N)



SECTION 9.12: LOWER MILFORD TOWNSHIP

	Standards																								2 (N)	2 (N)
13	Community Assistance Visit	+	+	+	+	+	-	+	+	+	N	N	+	+	+	+	N	N	N	N	+	N	+	-	14 (+) 2 (-) 7 (N)	18 (+) 2 (-) 7 (N)
14	NFIP FPA become a Certified Floodplain Manager	+	+	+	+	-	+	+	+	+	N	+	+	+	+	+	N	N	N	N	N	N	+	+	15 (+) 1 (-) 7 (N)	19 (+) 1 (-) 7 (N)
15	Join Community Rating System	+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	N	+	+	N	+	+	19 (+) 2 (-) 2 (N)	23 (+) 2 (-) 2 (N)
16	Archive Elevation Certificates	+	+	+	+	+	+	+	+	+	N	+	+	+	N	+	N	N	N	N	+	N	+	+	16 (+) 0 (-) 7 (N)	20 (+) 0 (-) 7 (N)
17	Support Plan Maintenance and Update	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	N	N	+	+	+	+	19 (+) 0 (-) 4 (N)	23 (+) 0 (-) 4 (N)
18	Update CEMP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	N	+	+	+	+	20 (+) 0 (-) 3 (N)	24 (+) 0 (-) 3 (N)
19	Enhance Mutual Aid Agreements	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	N	+	N	+	+	19 (+) 0 (-) 3 (N)	23 (+) 0 (-) 3 (N)
20	Identify Post-Disaster Capabilities	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	N	N	N	+	N	+	+	18 (+) 1 (-) 4 (N)	22 (+) 4 (-) 4 (N)
21	Develop Post-Disaster Capabilities	+	+	+	-	-	+	+	+	+	+	+	+	-	+	-	+	N	N	N	+	N	+	+	15 (+) 4 (-) 4 (N)	17 (+) 6 (-) 4 (N)



## H. FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

A more detailed flood loss analysis could be conducted on a structural level (versus the Census block analysis conducted for the HMP). The location of each building, details regarding the building (see additional data needed below) and the assessed or fair market value could be included in HAZUS-MH. The FEMA DFIRM boundaries, FEMA Flood Insurance Study detailed studies, base flood elevations and available Light Detection and Ranging (LiDAR) data or digital elevation models (DEM) could be used to generate a more accurate flood depth grid and then integrated into the HAZUS model. The flood depth-damage functions could be updated using the U.S. Army Corps of Engineer damage functions for residential building stock to better correlate HAZUS-MH results with FEMA benefit-cost analysis models. HAZUS-MH would then estimate more accurate potential losses per structure.

Additional data needed to perform the analysis described above:

- Specific building information – first-floor elevation (elevation certificates), number of stories, foundation type, basement, square footage, occupancy type, year built, type of construction etc.
- Assessed or fair market value of structure
- LiDAR or high resolution DEM

## I. HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map has been generated and is provided below for Lower Milford Township to illustrate the probable areas impacted within Lower Milford Township. This map is based on the best available data 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 Lower Milford Township has significant exposure. The Planning Area maps are provided in the hazard profiles within Section 4, Volume I of this Plan.

## J. ADDITIONAL COMMENTS

No additional comments at this time.

