

9.1 ALBURTIS BOROUGH

This section presents the jurisdictional annex for Alburdis Borough.

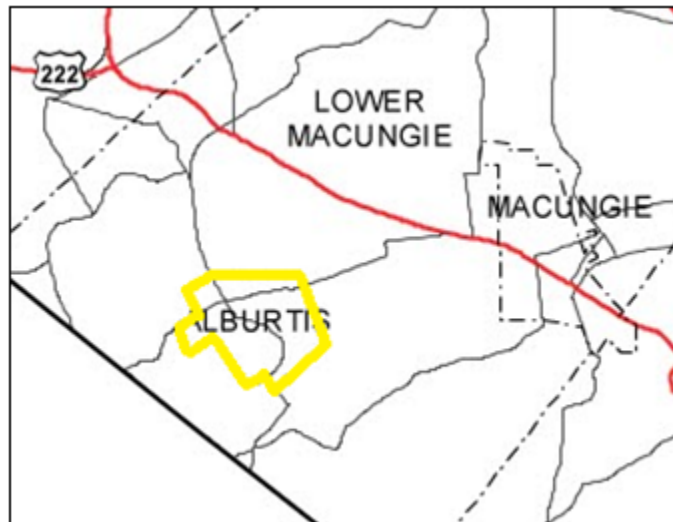
A. HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact		Alternate Point of Contact	
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<u>Title/</u>	Executive Secretary	<u>Title/</u>	
<u>Department</u>		<u>Department</u>	
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B. MUNICIPAL PROFILE

Alburdis Borough is located in the south-western part of Lehigh County. It encompasses an area of 0.7 square miles and has a population of 2,361 (2010 Census). As shown in Figure 1, the borough is located within the boundaries of Lower Macungie Township, which borders Berks County to the southwest; Upper Milford Township (Lehigh County) to the south; Salisbury Township and South Whitehall Township (both Lehigh County) to the east and northeast; and Upper Macungie Township (Lehigh County) to the northwest. Macungie Borough is also located partially within Lower Macungie Township, just to the east of Alburdis Borough.

Figure 1



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

The Swabia Creek, a tributary of the Little Lehigh Creek running through Berks and Lehigh Counties, traverses the borough. Swabia creek runs north to Alburdis through Lock Ridge Park, and then turns east, running roughly parallel to the Norfolk Southern Rail tracks.

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	Subsidence / Sinkholes	2	3	3	2	1	2.4
	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
	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
	Env. Hazard and Explosion	3	2	2	4	3	2.6
	Utility Interruption	3	1	3	4	3	2.5
MOD-ERATE	Transportation Accident	4	1	1	4	1	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
	Dam Failure	1	2	2	4	2	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	7/2006		Lehigh County			
Emergency Operations Plan	X	1/1/08					
Disaster Recovery Plan							
Evacuation Plan							
Continuity of Operations Plan							
NFIP							
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)							
Floodplain Management Plan							
Zoning Regulations	X	7/25/12					
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	2004		Southwestern Lehigh County Comprehensive Plan Committee	+		Includes recommendations on the adoption of carbonate bedrock standards.
Open Space Management Plan (or Parks/Rec or Greenways Plan)							

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				
Stormwater Management Plan / Ordinance							
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	X						
Fire Code							
Firewise							
Storm Ready	X	2012		Lehigh County			
Other							

E.2 Administrative and Technical Capability

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

E.3 Fiscal Capability

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming				
Community Development Block Grants (CDBG)	X		Executive Secretary – BBRP	
Special Purpose Taxes				
Gas / Electric Utility Fees				
Water / Sewer Fees	X		Executive Secretary	
Stormwater Utility Fees				
Development Impact Fees				
General Obligation, Revenue, and/or Special Tax Bonds				
Partnering Arrangements or Intergovernmental Agreements				
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	TBD
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

- Drainage improvement on West Penn Avenue

F.2 Hazard Vulnerabilities Identified

It is estimated that in Alburdis Borough, 5 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 6.2% is located within the 1% annual chance flood area. \$341,863 (0.1%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

There are 1 NFIP policies in the community. While there are 22 parcels located within the 1% annual chance flood area, there are no 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, \$164,000 (0.1%) of the municipality's general building stock replacement cost value (structure and contents) will be damaged, 35 people may be displaced, 9 people may seek short-term sheltering, and an estimated 4 tons of debris could be generated.

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

- Drainage improvement on West Penn Avenue

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	Maintain fleet of vehicles and equipment for emergency response.	Emergency Services	All	High	Medium	Borough budget; available public protection and emergency services grant programs	Borough	Ongoing	N/A
2	Work with electric utility to improve primary and secondary line clearing.	Property Protection	Severe Storms; Wind and Winter Weather	High	Medium	Borough Budget	Borough working with electric utilities	Short	Existing
3	Drainage improvement on West Penn Avenue	Property Protection	Flood	High	High	Borough Budget	FEMA Mitigation Grants and local budget	Long	New & Existing
4	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Categories	All Hazards	High	Low – High (for 5-year update)	Local 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	Ongoing	New & Existing
5	Complete the ongoing updates of the Comprehensive Emergency	Emergency Services	All Hazards	High	Low	Local Budget	Municipality with support from PEMA	Ongoing	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*
	Management Plans								
6	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	Local budget, FEMA HMA and HLS grant programs	Municipality with support from County, PEMA	Short – Long-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	Maintain adequate fleet of vehicles and equipment to handle anticipated emergency response	+	+	+	-	-	+	+	+	+	+	+	+	+	-	+	+	+	N	+	N	+	+	18 3 (+) 2 (-) (N)	22 3 (+) 3 (-) 2 (N)
2	Work with local electric utilities to improve line clearing during severe	+	+	+	-	-	-	+	-	+	+	+	+	+	-	+	+	+	+	+	N	+	+	17 5 (+) 1 (-) (N)	21 5 (+) 5 (-) 1 (N)

	wind/winter weather storms																										
3	Drainage improvement on West Penn Avenue	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+	+	+	-	19 (+) 1 (-) 3 (N)	23 (+) 1 (-) 3 (N)	
4	Support Plan Maintenance and Update	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	N	N	+	+	+	+	19 (+) 0 (-) 4 (N)	23 (+) 0 (-) 4 (N)	
5	Update CEMP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	N	+	+	+	+	20 (+) 0 (-) 3 (N)	24 (+) 0 (-) 3 (N)		
6	Identify and 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

Regional risk maps are provided in the hazard profiles within Section 4, Volume I of this Plan.

I. HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map has been generated and is provided below for Alburdis Borough to illustrate the probable areas impacted within Alburdis Borough. 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 Alburdis Borough 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.

