

9.63 WIND GAP BOROUGH

This section presents the jurisdictional annex for Wind Gap Borough.

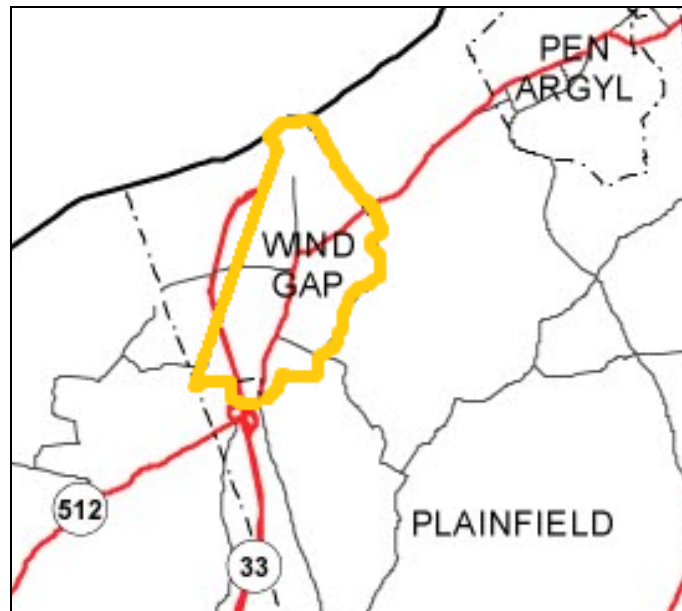
A. HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact		Alternate Point of Contact	
<u>Name</u>	Jeffrey Yob	<u>Name</u>	
<u>Title/</u>		<u>Title/</u>	
<u>Department</u>		<u>Department</u>	
<u>Address</u>		<u>Address</u>	
<u>Telephone</u>		<u>Telephone</u>	
<u>Fax</u>		<u>Fax</u>	
<u>Email</u>	jyob@epix.net	<u>Email</u>	

B. MUNICIPAL PROFILE

Wind Gap Borough is located in the northern part of Northampton County along the shared border of Monroe County. The borough encompasses an area of 1.4 square miles, and has a population of 2,720 (2010 Census). As shown in Figure 1, Wind Gap lies within the rural Township of Plainfield (Northampton County), shares its northern border with Monroe County, and is closely bordered to the west by Bushkill Township (Northampton County).

Figure 1



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

There are no waterways of significance in Wind Gap Borough. The Nazareth Reservoir is located north of the borough in Monroe County.

State Route 512 bisects the borough, travelling north from Bushkill Township to its intersection with Route 33 in south western Wind Gap. SR512 continues north through the borough as S. Broadway until veering northeast and becoming N. Lehigh Avenue and Pennsylvania Ave as it winds on through Plainfield Township and towards Pen Argyl Borough. South Broadway Street continues north through the borough center as North Broadway/State Route 115. As shown in Figure 1, Route 33 cuts through the southwest corner of Wind Gap, and continues north along the western border where it eventually crosses into Monroe County. State Route 106/Center Street is the borough's main east-west roadway.

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 at the end of this annex which illustrates the hazard areas within the municipality.

Property Name	Type (Residential or Commercial)	Number of Structures	Location	Known Hazard Zone*	Description / Status
No known or anticipated development identified in the Borough at this time.					

* 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 WIND GAP BOROUGH

Type of Event and Date	FEMA Disaster # (if applicable)	Local Damage and Losses

D. NATURAL 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
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				
<i>EXAMPLE: Hazard Mitigation Plan</i>	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan							
Emergency Operations Plan							
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							
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. 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				
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance							
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code							
Fire Code							
Firewise							
Storm Ready							
Other							

E.2 Administrative and Technical Capability

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)				
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		Robert Collura Engineers (contracted)	
Emergency Manager				
NFIP Floodplain Administrator				
Land Surveyors				
Scientists or staff familiar with the hazards of the community				
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program				
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)				
Special Purpose Taxes				
Gas / Electric Utility Fees				
Water / Sewer Fees				
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	NP	N/A
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. StormReady 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

The following table summarizes progress on the mitigation strategy identified by the Borough in the 2006 plan.

2006 Initiative		Status	Review Comments
Description	Location		
Install/replace/repair culvert	West Street Culvert	Completed	

Further details on mitigation activities completed in the Borough include:

- The Borough addressed a significant flooding problem that affected State Route 512 by condemning and removing a structure that was built over an undersized culvert, then restoring the original stream channel.

F.2 Hazard Vulnerabilities Identified

It is estimated that in Wind Gap Borough, 23 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 3.9% is located within the 1% annual chance flood area. \$11,808,483 (2.2%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

There are no NFIP policies in the community. While there are 9 structures located within the 1% annual chance flood area, there are no policies issued to property owners within the flood area. FEMA has identified no Repetitive Loss (RL) properties in the municipality.

HAZUS-MH estimates that for a 1% annual chance flood, \$103,354 (0.1%) of the municipality's general building stock replacement cost value (structure and contents) will be damaged, 119 people may be displaced, 106 people may seek short-term sheltering, and an estimated 49 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):

- Several undersized stormwater culverts.

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	West 6 th Street Stormwater Improvements – Identify and implement an engineered solution to address stormwater management issues on West 6 th Street, about one block south of prior stormwater improvements. Elevation limits gravity drainage in this area. Stormwater flooding in this area impacts a high-density residential area, and West 6 th Street is a cul-de-sac so flooding can block ingress/egress.	Structural Projects; Property Protection	Flood	Medium-High	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA	Long Term DOF	Existing
2	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action	Property Protection	Flood	Medium-High*	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA	Long 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*
	based on available funding from FEMA and local match availability.								
3	<p>Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.</p> <p>Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting.</p> <p>Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.</p>	Property Protection	Flood	Medium-High*	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA	Long Term DOF	Existing
4	<p>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.</p> <p>Further, continue to meet and/or exceed the minimum</p>	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*
	NFIP standards and criteria through the following NFIP-related continued compliance actions identified below.								
5	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.								
	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
6	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Prevention	Flood	High	Low	Municipal Budget	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA	Short Term	New & Existing
7	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
8	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA	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*
	Benefit-Cost Analysis.								
9	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	N/A
10	Archive elevation certificates	Public Education and Awareness	Flood	High	Low	Municipal Budget	NFIP Floodplain Administrator	On-going	N/A
11	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)	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
12	Complete the ongoing updates of the Comprehensive Emergency Management Plans	Emergency Services	All Hazards	High	Low	Municipal Budget	Municipality with support from PEMA	On-going	New & Existing
13	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	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*
							municipalities and County		
14	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	N/A
15	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	Long Term DOF	N/A

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 cannot reasonably be established at this time:

Low = < \$10,000

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

High = > \$100,000

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	West 6 th Street Stormwater Improvements	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+	+	+	-	19(+) 1(-) 3(N)	23(+) 1(-) 3(N)
2	Retrofit Vulnerable Structures	+	+	+	-	-	+	+	+	+	+	+	+	-	+	+	+	N	+	N	+	+	+	18(+) 3(-) 2(N)	22(+) 3(-) 2(N)
3	Acquire Vulnerable Structures	+	+	+	-	-	-	+	-	+	+	+	+	-	+	+	+	+	+	+	N	+	+	17(+) 5(-) 1(N)	21(+) 5(-) 1(N)
4	Maintain NFIP	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	N	+	+	N	+	-	19(+) 2(-)	23(+)

15	Develop Post-Disaster Capabilities	+	+	+	-	-	+	+	+	+	+	+	+	-	+	-	+	N	N	N	+	N	+	+	15 (+) 4 (-) 4 (N)	17 (+) 6 (-) 4 (N)
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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 Wind Gap Borough to illustrate the probable areas impacted within Wind Gap 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 Wind Gap Borough has significant exposure. Regional risk maps are provided in the hazard profiles within Section 4, Volume I of this Plan.

J. ADDITIONAL COMMENTS

No additional comments at this time.

