



# Westmoreland County

## Multi-Jurisdictional Multi-Hazard Mitigation Plan Update

November 2014



*Westmoreland County*  
Pennsylvania



Prepared by:



Volume I

<u>Section</u>	<u>Page</u>
<b>SECTION 1 INTRODUCTION .....</b>	<b>1-1</b>
1.1 Background.....	1-1
1.1.1 DMA 2000 Origins -The Robert T. Stafford Disaster Relief and Emergency Assistance Act.....	1-1
1.2 Purpose.....	1-1
1.3 Scope.....	1-2
1.3.1 Organizations Involved in the Mitigation Planning Effort .....	1-2
1.4 Authority and References .....	1-4
1.5 Summary of Changes in the Plan Update .....	1-6
1.5.1 Organization.....	1-6
1.5.2 Risk Assessment .....	1-6
1.5.3 Capability Assessment.....	1-6
1.5.4 Mitigation Strategies.....	1-6
1.5.5 Plan Integration into Other Planning Mechanisms .....	1-7
1.6 Organization of Mitigation Plan .....	1-7
1.6.1 Appendices.....	1-8
<b>SECTION 2 COUNTY PROFILE .....</b>	<b>2-1</b>
2.1 Location .....	2-1
2.2 History.....	2-2
2.3 Government and Political Subdivisions.....	2-3
2.4 Physical Setting.....	2-5
2.4.1 Hydrography and Hydrology .....	2-5
2.4.2 Topography .....	2-7
2.4.3 Geology.....	2-8
2.4.4 Climate.....	2-10
2.4.5 Land Use and Land Cover .....	2-11
2.4.6 Development Trends and New Development .....	2-13
2.5 Population and Demographics .....	2-14
2.5.1 Population and Demographic Trends.....	2-16
2.5.2 Household Trends .....	2-18
2.6 Economic Profile.....	2-19
2.6.1 Unemployment.....	2-19
2.6.2 Employment by Industry.....	2-19
2.6.3 Workforce Composition.....	2-20
<b>SECTION 3 PLANNING PROCESS.....</b>	<b>3-1</b>
3.1 Introduction .....	3-1
3.2 Organization of Planning Process.....	3-2
3.3 Plan Update Activity.....	3-5
3.4 Stakeholder Outreach and Involvement.....	3-8
3.4.1 Federal, State and Regional Agencies .....	3-8
3.4.2 Westmoreland County Government Agencies.....	3-9
3.4.3 Utilities.....	3-9
3.5 Public Outreach and Participation .....	3-10





3.6 Integration/Coordination with Existing Plans and Programs.....3-10

3.6.1 Emergency Management Plans and Programs.....3-11

3.6.2 Comprehensive Planning and Land Use Regulation.....3-11

3.6.3 Act 167 Stormwater Management Plan .....3-12

3.6.4 National Flood Insurance Program (NFIP) and the Community Rating System (CRS)3-12

3.6.5 FEMA Unified Hazard Mitigation Assistance (HMA).....3-12

3.6.6 Capital Improvement Planning .....3-13

3.6.7 Housing and Urban Development (HUD) and Community Development Block Grant  
(CDBG) Funding .....3-13

**SECTION 4 HAZARD PROFILES**

4.0 Risk Assessment .....4.0-1

4.1 Methodology and Tools .....4.1-1

4.1.1 Methodology .....4.1-1

4.1.2 Tools .....4.1-1

4.2 Hazard Identification .....4.2-1

4.2.1 Natural Hazards .....4.2-1

4.2.2 Non-Natural Hazards .....4.2-1

4.2.3 Natural Hazards .....4.2-2

4.2.4 Non-Natural Hazards .....4.2-2

4.3 Hazard Profiles and Vulnerability Assessment.....4.3-1

4.3.1 Avalanche .....4.3.1-1

4.3.1.1 Location and Extent.....4.3.1-2

4.3.1.2 Range of Magnitude.....4.3.1-3

4.3.1.3 Past Occurrence .....4.3.1-4

4.3.1.4 Future Occurrence.....4.3.1-5

4.3.1.5 Vulnerability Assessment .....4.3.1-5

4.3.1.5.1 Overview of Vulnerability .....4.3.1-5

4.3.1.5.2 Data and Methodology.....4.3.1-5

4.3.1.5.3 Impact on Life, Health, and Safety .....4.3.1-5

4.3.1.5.4 Impact on General Building Stock, Critical Facilities and the Economy .....4.3.1-5

4.3.1.5.5 Future Growth and Development.....4.3.1-5

4.3.1.5.6 Effect of Climate Change on Vulnerability .....4.3.1-5

4.3.1.5.7 Additional Data and Next Steps.....4.3.1-6

4.3.2 Drought .....4.3.2-1

4.3.2.1 Location and Extent.....4.3.2-2

4.3.2.2 Range of Magnitude.....4.3.2-3

4.3.2.3 Past Occurrence .....4.3.2-7

4.3.2.4 Future Occurrence.....4.3.2-11

4.3.2.5 Vulnerability Assessment .....4.3.2-12

4.3.2.5.1 Overview of Vulnerability .....4.3.2-13

4.3.2.5.2 Data and Methodology.....4.3.2-13

4.3.2.5.3 Impact on Life, Health and Safety .....4.3.2-13

4.3.2.5.4 Impact on General Building Stock and Critical Facilities .....4.3.2-13

4.3.2.5.5 Impact on the Economy .....4.3.2-13

4.3.2.5.6 Impact on the Environment.....4.3.2-15

4.3.2.5.7 Future Growth and Development.....4.3.2-15

4.3.2.5.8 Effect of Climate Change on Vulnerability .....4.3.2-15

4.3.2.5.9 Additional Data and Next Steps.....4.3.2-16

4.3.3 Earthquake .....4.3.3-1

4.3.3.1 Location and Extent .....4.3.3-2

4.3.3.2 Range of Magnitude.....4.3.3-6

4.3.3.3 Past Occurrence .....4.3.3-12

4.3.3.4 Future Occurrence.....4.3.3-13

4.3.3.5 Vulnerability Assessment .....4.3.3-13

4.3.3.5.1 Overview of Vulnerability .....4.3.3-13

4.3.3.5.2 Data and Methodology.....4.3.3-14

4.3.3.5.3 Impact on Life, Health, and Safety .....4.3.3-14

4.3.3.5.4 Impact on General Building Stock.....4.3.3-17

4.3.3.5.5 Impact on Critical Facilities.....4.3.3-24

4.3.3.5.6 Impact on Economy .....4.3.3-25

4.3.3.5.7 Impact on the Environment.....4.3.3-28

4.3.3.5.8 Future Growth and Development.....4.3.3-28

4.3.3.5.9 Effect of Climate Change on Vulnerability .....4.3.3-29

4.3.3.5.10 Additional Data and Next Steps.....4.3.3-29

4.3.4 Extreme Temperature .....4.3.4-1

4.3.4.1 Location and Extent .....4.3.4-1

4.3.4.2 Range of Magnitude.....4.3.4-2

4.3.4.3 Past Occurrence .....4.3.4-5

4.3.4.4 Future Occurrence.....4.3.4-6

4.3.4.5 Vulnerability Assessment .....4.3.4-7

4.3.4.5.1 Overview of Vulnerability .....4.3.4-7

4.3.4.5.2 Data and Methodology.....4.3.4-7

4.3.4.5.3 Impact on Life, Health and Safety .....4.3.4-7

4.3.4.5.4 Impact on General Building Stock.....4.3.4-8

4.3.4.5.5 Impact on Critical Facilities.....4.3.4-8

4.3.4.5.6 Impact on the Economy .....4.3.4-8

4.3.4.5.7 Future Growth and Development.....4.3.4-8

4.3.4.5.8 Effect of Climate Change on Vulnerability .....4.3.4-8

4.3.4.5.9 Additional Data and Next Steps.....4.3.4-9

4.3.5 Flood .....4.3.5-1

4.3.5.1 Location and Extent.....4.3.5-2

4.3.5.2 Range of Magnitude.....4.3.5-6

4.3.5.3 Past Occurrence .....4.3.5-7

4.3.5.4 Future Occurrence.....4.3.5-18

4.3.5.5 Vulnerability Assessment .....4.3.5-18

4.3.5.5.1 Overview of Vulnerability .....4.3.5-19

4.3.5.5.2 Data and Methodology.....4.3.5-19

4.3.5.5.3 Impact on Life, Health, and Safety .....4.3.5-19

4.3.5.5.4 Impact on General Building Stock.....4.3.5-24

4.3.5.5.5 Impact on Critical Facilities.....4.3.5-36

4.3.5.5.6 Impact on the Economy .....4.3.5-38

4.3.5.5.7 Future Growth and Development.....4.3.5-40

4.3.5.5.8 Effect of Climate Change on Vulnerability .....4.3.5-41

4.3.5.5.9 Additional Data and Next Steps.....4.3.5-41

4.3.6 Hailstorm .....4.3.6-2

4.3.6.1 Location and Extent .....4.3.6-2

4.3.6.2 Range of Magnitude.....4.3.6-4

4.3.6.3 Past Occurrence .....4.3.6-5

4.3.6.4 Future Occurrence.....4.3.6-8

4.3.6.5 Vulnerability Assessment .....4.3.6-9

4.3.6.5.1 Overview of Vulnerability .....4.3.6-9

4.3.6.5.2 Data and Methodology.....4.3.6-9

4.3.6.5.3 Impact on Life, Health, and Safety .....4.3.6-9

4.3.6.5.4 Impact on General Building Stock, Critical Facilities, and the Economy .....4.3.6-9

4.3.6.5.5 Future Growth and Development.....4.3.6-10

4.3.6.5.6 Effect of Climate Change on Vulnerability .....4.3.6-10

4.3.6.5.7 Additional Data and Next Steps.....4.3.6-10

4.3.7 Hurricane and Tropical Storm .....4.3.7-1

4.3.7.1 Location and Extent .....4.3.7-2

4.3.7.2 Range of Magnitude.....4.3.7-7

4.3.7.3 Past Occurrence .....4.3.7-8

4.3.7.4 Future Occurrence.....4.3.7-12

4.3.7.5 Vulnerability Assessment .....4.3.7-15

4.3.7.1.5 Overview of Vulnerability .....4.3.7-15

4.3.7.2.5 Data and Methodology.....4.3.7-15

4.3.7.3.5 Impact on Life, Health, and Safety .....4.3.7-16

4.3.7.4.5 Impact on General Building Stock.....4.3.7-16

4.3.7.5.5 Impact on Critical Facilities.....4.3.7-27

4.3.7.6.5 Impact on Economy .....4.3.7-27

4.3.7.7.5 Future Growth and Development.....4.3.7-30

4.3.7.8.5 Additional Data and Next Steps.....4.3.7-30

4.3.8 Landslide.....4.3.8-1

4.3.8.1 Location and Extent .....4.3.8-1

4.3.8.2 Range of Magnitude.....4.3.8-2

4.3.8.3 Past Occurrence .....4.3.8-3

4.3.8.4 Future Occurrence.....4.3.8-3

4.3.8.5 Vulnerability Assessment .....4.3.8-3

4.3.8.5.1 Overview of Vulnerability .....4.3.8-3

4.3.8.5.2 Data and Methodology.....4.3.8-4

4.3.8.5.3 Impact on Life, Health and Safety .....4.3.8-4

4.3.8.5.4 Impact on General Building Stock.....4.3.8-6

4.3.8.5.5 Impact on Critical Facilities.....4.3.8-9

4.3.8.5.6 Impact on the Economy .....4.3.8-9

4.3.8.5.7 Future Growth and Development.....4.3.8-9

4.3.8.5.8 Effect of Climate Change on Vulnerability .....4.3.8-9

4.3.8.5.9 Additional Data and Next Steps.....4.3.8-9

4.3.9 Lightning Strike .....4.3.9-1

4.3.9.1 Location and Extent .....4.3.9-1

4.3.9.2 Range of Magnitude.....4.3.9-1

4.3.9.3 Past Occurrence .....4.3.9-2

4.3.9.4 Future Occurrence.....4.3.9-3

4.3.9.5 Vulnerability Assessment .....4.3.9-3

4.3.9.5.1 Overview of Vulnerability .....4.3.9-3

4.3.9.5.2 Data and Methodology.....4.3.9-4

4.3.9.5.3 Impact on Life, Health, and Safety .....4.3.9-4

4.3.9.5.4 Impact on General Building Stock, Critical Facilities, and the Economy .....4.3.9-5

4.3.9.5.5 Future Growth and Development.....4.3.9-5

4.3.9.5.6 Effect of Climate Change on Vulnerability .....4.3.9-5

4.3.9.5.7 Additional Data and Next Steps.....4.3.9-6



4.3.10 Radon Exposure .....4.3.10-1

4.3.10.1 Location and Extent ..... 4.3.10-1

4.3.10.2 Range of Magnitude..... 4.3.10-5

4.3.10.3 Past Occurrence ..... 4.3.10-6

4.3.10.4 Future Occurrence..... 4.3.10-7

4.3.10.5 Vulnerability Assessment ..... 4.3.10-7

4.3.10.5.1 Overview of Vulnerability ..... 4.3.10-7

4.3.10.5.2 Data and Methodology..... 4.3.10-8

4.3.10.5.3 Impact on Life, Health and Safety ..... 4.3.10-8

4.3.10.5.4 Impact on General Building Stock and Critical Facilities ..... 4.3.10-8

4.3.10.5.5 Impact on the Economy ..... 4.3.10-8

4.3.10.5.6 Impact on the Environment..... 4.3.10-8

4.3.10.5.7 Future Growth and Development..... 4.3.10-9

4.3.10.5.8 Additional Data and Next Steps..... 4.3.10-9

4.3.11 Subsidence/Sinkhole..... 4.3.11-1

4.3.11.1 Location and Extent..... 4.3.11-2

4.3.11.2 Range of Magnitude..... 4.3.11-7

4.3.11.3 Past Occurrence ..... 4.3.11-7

4.3.11.4 Future Occurrence..... 4.3.11-10

4.3.11.5 Vulnerability Assessment ..... 4.3.11-10

4.3.11.5.1 Overview of Vulnerability ..... 4.3.11-10

4.3.11.5.2 Data and Methodology..... 4.3.11-12

4.3.11.5.3 Impact on Life, Health, and Safety ..... 4.3.11-12

4.3.11.5.4 Impact on General Building Stock..... 4.3.11-14

4.3.11.5.5 Impact on Critical Facilities..... 4.3.11-16

4.3.11.5.6 Impact on the Economy ..... 4.3.11-17

4.3.11.5.7 Future Growth and Development..... 4.3.11-17

4.3.11.5.8 Effect of Climate Change on Vulnerability ..... 4.3.11-17

4.3.11.5.9 Additional Data and Next Steps..... 4.3.11-17

4.3.12 Wildfire ..... 4.3.12-1

4.3.12.1 Location and Extent..... 4.3.12-1

4.3.12.2 Range of Magnitude..... 4.3.12-11

4.3.12.3 Past Occurrence ..... 4.3.12-11

4.3.12.4 Future Occurrence..... 4.3.12-13

4.3.12.5 Vulnerability Assessment ..... 4.3.12-14

4.3.12.5.1 Overview of Vulnerability ..... 4.3.12-14

4.3.12.5.2 Data and Methodology..... 4.3.12-14

4.3.12.5.3 Impact on Life, Health, and Safety ..... 4.3.12-14

4.3.12.5.4 Impact on General Building Stock..... 4.3.12-16

4.3.12.5.5 Impact on Critical Facilities..... 4.3.12-18

4.3.12.5.6 Impact on the Economy ..... 4.3.12-19

4.3.12.5.7 Future Growth and Development..... 4.3.12-19

4.3.12.5.8 Effect of Climate Change on Vulnerability ..... 4.3.12-19

4.3.12.5.9 Additional Data and Next Steps..... 4.3.12-20

4.3.13 Tornado, Windstorm..... 4.3.13-1

4.3.13.1 Location and Extent..... 4.3.13-2

4.3.13.2 Range of Magnitude..... 4.3.13-7

4.3.13.3 Past Occurrence ..... 4.3.13-10

4.3.13.4 Future Occurrence..... 4.3.13-17

4.3.13.5 Vulnerability Assessment ..... 4.3.13-17



4.3.13.5.1 Overview of Vulnerability ..... 4.3.13-17

4.3.13.5.2 Data and Methodology ..... 4.3.13-17

4.3.13.5.3 Impact on Life, Health and Safety ..... 4.3.13-18

4.3.13.5.4 Impact on General Building Stock and Critical Facilities ..... 4.3.13-18

4.3.13.5.5 Impact on the Economy ..... 4.3.13-19

4.3.13.5.6 Impact on the Environment..... 4.3.13-19

4.3.13.5.7 Future Growth and Development..... 4.3.13-19

4.3.13.5.8 Effect of Climate Change on Vulnerability ..... 4.3.13-19

4.3.13.5.9 Additional Data and Next Steps..... 4.3.13-19

4.3.14 Winter Storm ..... 4.3.14-1

4.3.14.1 Location and Extent ..... 4.3.14-2

4.3.14.2 Range in Magnitude..... 4.3.14-3

4.3.14.3 Past Occurrence ..... 4.3.14-4

4.3.14.4 Future Occurrence..... 4.3.14-10

4.3.14.5 Vulnerability Assessment ..... 4.3.14-10

4.3.14.5.1 Overview of Vulnerability ..... 4.3.14-10

4.3.14.5.2 Data and Methodology..... 4.3.14-10

4.3.14.5.3 Impact on Life, Health, and Safety ..... 4.3.14-10

4.3.14.5.4 Impact on General Building Stock..... 4.3.14-11

4.3.14.5.5 Impact on Critical Facilities..... 4.3.14-13

4.3.14.5.6 Impact on the Economy ..... 4.3.14-14

4.3.14.5.7 Impact on the Environment..... 4.3.14-14

4.3.14.5.8 Future Growth and Development..... 4.3.14-14

4.3.14.5.9 Effect of Climate Change on Vulnerability ..... 4.3.14-14

4.3.14.5.10 Additional Data and Next Steps ..... 4.3.14-15

4.3.15 Dam Failure ..... 4.3.15-1

4.3.15.1 Location and Extent ..... 4.3.15-3

4.3.15.2 Range of Magnitude..... 4.3.15-14

4.3.15.3 Past Occurrence ..... 4.3.15-14

4.3.15.4 Future Occurrence..... 4.3.15-15

4.3.15.5 Vulnerability Assessment ..... 4.3.15-15

4.3.16 Environmental Hazard ..... 4.3.16-1

4.3.16.1 Location and Extent ..... 4.3.16-1

4.3.16.2 Range of Magnitude..... 4.3.16-4

4.3.16.3 Past Occurrence ..... 4.3.16-4

4.3.16.4 Future Occurrence..... 4.3.16-6

4.3.16.5 Vulnerability Assessment ..... 4.3.16-7

4.3.17 Fire (Urban/Structural Fire) ..... 4.3.17-1

4.3.17.1 Location and Extent ..... 4.3.17-1

4.3.17.2 Range of Magnitude..... 4.3.17-1

4.3.17.3 Past Occurrence ..... 4.3.17-1

4.3.17.4 Future Occurrence..... 4.3.17-2

4.3.17.5 Vulnerability Assessment ..... 4.3.17-2

4.3.18 Nuclear Incident..... 4.3.18-1

4.3.18.1 Location and Extent ..... 4.3.18-1

4.3.18.2 Range of Magnitude..... 4.3.18-4

4.3.18.3 Past Occurrence ..... 4.3.18-5

4.3.18.4 Future Occurrence..... 4.3.18-5

4.3.18.5 Vulnerability Assessment ..... 4.3.18-5

4.3.19 Terrorism ..... 4.3.19-1

4.3.19.1	Location and Extent .....	4.3.19-1
4.3.19.2	Range of Magnitude.....	4.3.19-1
4.3.19.3	Past Occurrence .....	4.3.19-1
4.3.19.4	Future Occurrence.....	4.3.19-2
4.3.19.5	Vulnerability Assessment .....	4.3.19-2
4.3.20	Transportation Accident .....	4.3.20-1
4.3.20.1	Location and Extent .....	4.3.20-2
4.3.20.2	Range of Magnitude.....	4.3.20-6
4.3.20.3	Past Occurrence .....	4.3.20-7
4.3.20.4	Future Occurrence.....	4.3.20-8
4.3.20.5	Vulnerability Assessment .....	4.3.20-9
4.3.20.1.1	Overview of Vulnerability .....	4.3.20-9
4.3.20.1.2	Data and Methodology.....	4.3.20-9
4.3.20.1.3	Impact on Life, Health and Safety .....	4.3.20-9
4.3.20.1.4	Impact on General Building Stock, Critical Facilities, Economy and Future Development .....	4.3.20-10
4.3.20.1.5	Additional Data and Next Steps.....	4.3.20-10
4.3.20.1.6	Overall Vulnerability Assessment .....	4.3.20-10
4.3.21	Utility Interruption.....	4.3.21-1
4.3.21.1	Location and Extent .....	4.3.21-1
4.3.21.2	Range of Magnitude.....	4.3.21-1
4.3.21.3	Past Occurrence .....	4.3.21-2
4.3.21.4	Future Occurrence.....	4.3.21-2
4.3.21.5	Vulnerability Assessment .....	4.3.21-3
<b>SECTION 5</b>	<b>CAPABILITY ASSESSMENT .....</b>	<b>5-1</b>
5.1	Emergency Management .....	5-2
5.1.1	County Capabilities.....	5-2
5.1.2	Local Capabilities .....	5-9
5.2	Participation in the National Flood Insurance Program.....	5-12
5.3	Community Rating System (CRS).....	5-13
5.4	Planning and Regulatory Capability .....	5-13
5.4.1	Westmoreland County Comprehensive Plan .....	5-13
5.4.2	Stormwater Management Planning.....	5-14
5.4.3	Water Supply Planning .....	5-15
5.4.4	Natural Resource Planning .....	5-15
5.4.5	Open Space Planning .....	5-15
5.4.6	Informational Resources .....	5-15
5.4.7	Municipal Capabilities .....	5-16
5.5	Administrative and Technical Capability .....	5-21
5.5.1	Municipal Capabilities .....	5-21
5.6	Fiscal Capability .....	5-26
5.6.1	Capital Improvement Planning .....	5-26
5.6.2	Federal Hazard Mitigation Funding Opportunities.....	5-26
5.6.3	Federal Disaster Assistance Programs .....	5-27
5.6.4	Other Potential Funding Sources .....	5-28
5.6.5	Municipal Capabilities .....	5-28
5.7	Political Capability .....	5-31
5.7.1	Municipal Capabilities .....	5-32
5.8	Self-Assessment.....	5-34



5.9 Capability Assessment Recommendations ..... 5-36

**SECTION 6 MITIGATION STRATEGY ..... 6-1**

6.1 FEMA Requirements Addressed in this Section..... 6-1

6.2 Mitigation Planning Approach..... 6-1

6.3 Review of Mitigation Goals and Objectives ..... 6-2

6.4 Develop and Prioritize Mitigation Strategies..... 6-2

6.5 Update of County-Level Mitigation Strategies ..... 6-13

6.6 Mitigation Strategy Prioritization and Implementation ..... 6-18

**SECTION 7 PLAN MAINTENANCE PROCEDURES ..... 7-1**

7.1 Monitoring Evaluating and Updating ..... 7-1

7.1.1 Monitoring ..... 7-2

7.1.2 Evaluating ..... 7-2

7.1.3 Updating ..... 7-4

7.2 Implementation for Mitigation Plan Through Existing Programs ..... 7-4

7.3 Continued Public Involvement ..... 7-8

**SECTION 8 PLAN ADOPTION ..... 8-1**

8.1 Overview ..... 8-1

8.1.1 Plan Adoption by Local Governing Bodies ..... 8-1

**ACRONYMS ..... AC-1**

**GLOSSARY ..... G-1**

**Appendices**

Appendix A References

Appendix B Local Plan Review Crosswalk

Appendix C Meeting Documentation

Appendix D Municipal Forms and Worksheets

Appendix E Public and Stakeholder Outreach Documentation

Appendix F Sample Adoption Resolution

Appendix G Federal Mitigation Programs

**TABLES**

<u>Table</u>	<u>Page</u>
1-1	Jurisdictions Participating in the 2014 Update ..... 1-2
1-2	FEMA Local Mitigation Plan Crosswalk ..... 1-5
2-1.	Westmoreland Political Jurisdictions..... 2-3
2-2.	Watershed Associations ..... 2-8
2-3.	Stormwater Management Plans for Westmoreland County..... 2-8
2-4.	Westmoreland County Population and Demographic Statistics Summary (2005-2009 ACS and 2010 US Census)..... 2-16
2-5.	Westmoreland County Population and Demographic Statistics ..... 2-16
3-1.	Jurisdictions Participating in the 2014 Update ..... 3-1
3-2.	Westmoreland County Hazard Mitigation Plan Update Working Group Membership ... 3-3
3-3.	Summary of Project Activity and Milestones ..... 3-6
4.3.2-1.	Precipitation Deficit Drought Indicators for Pennsylvania..... 4.3.2-5
4.3.2-2.	Monthly and Annual Precipitation Normal (total in inches) from 1981 to 2010 at NOAA Weather Stations in Westmoreland County ..... 4.3.2-6
4.3.2-3.	Palmer Drought Severity Index (PDSI) Classifications..... 4.3.2-7
4.3.2-4.	Past Occurrences of Drought Events from 1895 to 2013..... 4.3.2-9
4.3.2-5.	Crop Loss Insurance Claims Due to Drought, 1948 to 2013 ..... 4.3.2-11
4.3.2-6.	Impacts on the Economy ..... 4.3.2-14
4.3.2-7.	Estimated County Losses Relating to Agricultural Production ..... 4.3.2-14
4.3.3-1	NEHRP Soil Classifications ..... 4.3.3-2
4.3.3-2.	Richter Scale Magnitudes ..... 4.3.3-7
4.3.3-3.	Modified Mercalli Intensity Scale with Associated Impacts ..... 4.3.3-7
4.3.3-4.	Summary of Estimated Sheltering Needs for Westmoreland County..... 4.3.3-15
4.3.3-5.	Estimated Displaced Households and Population Seeking Short-Term Shelter from the 500- and 2,500-year MRP Events per Municipality ..... 4.3.3-15
4.3.3-6.	Estimated Number of Injuries and Casualties from the 2,500-Year MRP Earthquake Event ..... 4.3.3-17
4.3.3-7.	Example of Structural Damage State Definitions for a Light Wood-Framed Building ..... 4.3.3-18
4.3.3-8.	Estimated Buildings Damaged by General Occupancy for 100-year, 500-year, and 2,500-year MRP Earthquake Events..... 4.3.3-20
4.3.3-9.	Estimated Number of Buildings Damaged by Building Type for 100-year, 500-year, and 2,500-year MRP Earthquake Events..... 4.3.3-20
4.3.3-10.	Estimated Building Value (Building and Contents) Damaged by the 500- and 2,500-Year MRP Earthquake Events ..... 4.3.3-21
4.3.3-11.	Estimated Damage and Loss of Functionality for Critical Facilities and Utilities in Westmoreland County for the 500-Year MRP Earthquake Event ..... 4.3.3-24
4.3.3-12.	Estimated Damage and Loss of Functionality for Critical Facilities and Utilities in Westmoreland County for the 2,500-Year MRP Earthquake Event..... 4.3.3-25
4.3.3-13.	Estimated Debris Generated by the 500- and 2,500-year MRP Earthquake Events 4.3.3-26

4.3.4-1. Four Categories of Heat Stress .....4.3.4-3

4.3.4-2. Extreme Temperature Events in Westmoreland County, 1950 to 2014.....4.3.4-6

4.3.5-1. Flooding Events between 1950 and 2013 in Westmoreland County .....4.3.5-9

4.3.5-2. Ice-Jam Events in Westmoreland County between 1780 and 2013.....4.3.5-17

4.3.5-3. Estimated Westmoreland County Population Vulnerable to the 1-Percent Flood Hazard (2010 Census) .....4.3.5-19

4.3.5-4. Estimated Population Displaced or Seeking Short-Term Shelter from the 1-Percent Annual Chance Flood Event .....4.3.5-22

4.3.5-5. Total Land Area Located in the 1-Percent Annual Chance Flood Zones (acres) ....4.3.5-24

4.3.5-6. Estimated General Building Stock Exposure to the 1-Percent Annual Chance Flood Event.....4.3.5-27

4.3.5-7. Estimated General Building Stock Potential Loss to the 1-Percent Annual Chance Flood Event .....4.3.5-30

4.3.5-8. Occupancy Class of Repetitive Loss Structures in Westmoreland County .....4.3.5-33

4.3.5-9. NFIP Policies, Claims, and Repetitive Loss Statistics.....4.3.5-34

4.3.5-10. Critical Facilities Located in the 1-Percent Annual Chance Flood Boundary and Estimated Potential Damage .....4.3.5-37

4.3.5-11. Estimated Debris Generated from the 1-Percent Flood Event .....4.3.5-38

4.3.6 1. Hail Size.....4.3.6-5

4.3.6 2. History of Hailstorms in Westmoreland County, 1950 to 2013.....4.3.6-6

4.3.6 3. Estimated County Losses Relating to Agricultural Production .....4.3.6-10

4.3.7 1. Tropical Cyclone Names for the Atlantic .....4.3.7-2

4.3.7 2. The Saffir-Simpson Scale .....4.3.7-3

4.3.7 3. Hurricanes and Tropical Storms that have Affected Southwest Pennsylvania .....4.3.7-9

4.3.7 4. Description of Damage Categories .....4.3.7-17

4.3.7 5. Estimated Building Replacement Value (Structure Only) Damaged by the 100-Year and 500-Year Mean Return Period Hurricane-Related Winds for All Occupancy Classes .....4.3.7-19

4.3.7 6. Debris Production for 100- and 500-Year Mean Return Period Hurricane-Related Winds.....4.3.7-28

4.3.8-1. Population Located in the High Susceptibility/Moderate Incidence.....4.3.8-5

4.3.8-2. General Building Stock Located in the High Susceptibility/Moderate Incidence and High Landslide Incidence Hazard Areas .....4.3.8-7

4.3.9-1. Westmoreland County Recorded Lightning Events.....4.3.9-2

4.3.10 1. Radon Risk for Smokers and Non-Smokers .....4.3.10-5

4.3.11-1. Reported Sinkholes in Westmoreland County, 2002-2013.....4.3.11-8

4.3.11-2. Municipalities Vulnerable to Sinkholes/Subsidence Events.....4.3.11-10

4.3.11-3. Estimated Population Located over Limestone Bedrock (U.S. Census 2010).....4.3.11-12

4.3.11-4. Estimated General Building Stock Located over Limestone Bedrock.....4.3.11-14

4.3.11-5. Number of Critical Facilities Located in the Identified Hazard Area.....4.3.11-16



4.3.12-1	Land Use Summary for Westmoreland County .....	4.3.12-1
4.3.12-2.	Fire Danger Rating and Color Code .....	4.3.12-7
4.3.12-3.	Reported Wildfires in Westmoreland County.....	4.3.12-11
4.3.12-4.	Estimated Population Located within the WUI in Westmoreland County .....	4.3.12-15
4.3.12-5.	Building Stock Replacement Value Located within the WUI in Westmoreland County .....	4.3.12-17
4.3.12-6.	Number of Critical Facilities in the WUI in Westmoreland County .....	4.3.12-19
4.3.13-1.	NWS Wind Descriptions .....	4.3.13-2
4.3.13-2.	Wind Zones in the U.S.....	4.3.13-3
4.3.13-3.	Enhanced Fujita Damage Scale .....	4.3.13-8
4.3.13-4.	EF Scale Damage Indicators.....	4.3.13-9
4.3.13-5.	Tornado and Windstorm Events in Westmoreland County, 1954 to 2013 .....	4.3.13-12
4.3.14-1.	RSI Ranking Categories.....	4.3.14-3
4.3.14-2.	Winter Storm Events in Westmoreland County, 1950 and 2013 .....	4.3.14-6
4.3.14-3.	General Building Stock Exposure (Structure Only) and Estimated Losses from.....	4.3.14-11
4.3.15 1.	Dam Classification Definitions.....	4.3.15-3
4.3.15 2.	Dams in Westmoreland County .....	4.3.15-4
4.3.15 3.	U.S. Army Corps of Engineers Hazard Potential Classification.....	4.3.15-14
4.3.16-1.	Reported Release of Hazardous Materials 2006-2012.....	4.3.16-4
4.3.16-2.	Reported Explosion Incidents 2006-2012.....	4.3.16-6
4.3.16-3.	Likelihood of Future Occurrence of Environmental / Explosion Hazard .....	4.3.16-6
4.3.17-1	Reported Structural Fires 2007-2012.....	4.3.17-2
4.3.17-2	Likelihood of Future Occurrences of Structural Fire.....	4.3.17-2
4.3.19-1	Terrorist Events Since 2007.....	4.3.19-2
4.3.20-1	Westmoreland County Transportation Network.....	4.3.20-2
4.3.20-2	Bridges in Westmoreland County .....	4.3.20-2
4.3.20-3	Injuries and Fatalities from Automobile Crashes .....	4.3.20-6
4.3.20-4	Injuries and Fatalities of Pedestrians .....	4.3.20-6
4.3.20-5	Summary of Major Accidents in Westmoreland County, 2006 to 2012.....	4.3.20-7
4.3.20-6	Significant Accidents in Westmoreland County, 2006 to 2012.....	4.3.20-7
4.3.21-1	Utility Interruptions from 2007-2012 .....	4.3.21-2
4.3.21-2	Likelihood of Future Occurrence of Utility Interruptions in Westmoreland County .....	4.3.21-2
4.4-1	Summary of Risk Factor (RF) Approach.....	4.4-2
4.4-2.	Risk Ranking for Westmoreland County .....	4.4-3

5.4 1 Planning and Regulatory Capability ..... 5-17

5.5 1 Administrative and Technical Ability..... 5-22

5.6 1 Fiscal Capability ..... 5-29

5.7 1 Political Capability ..... 5-32

5.8 1 Capability Self-Assessment Matrix ..... 5-34

6-1 Hazard Mitigation Strategy ..... 6-4

6-2 Mitigation Action Review Worksheet ..... 6-14

6-3 Analysis of Mitigation Actions ..... 6-20

7-1 Westmoreland County Hazard Mitigation Plan Update Working Group Membership... 7-1

FIGURES

<u>Figure</u>	<u>Page</u>
2-1.	Westmoreland County ..... 2-1
2-2.	Watersheds..... 2-6
2-3.	Westmoreland County Geology..... 2-9
2-4.	Existing Land Use..... 2-12
2-5.	Development Areas..... 2-14
2-6.	Population Growth Projections ..... 2-17
2-7.	School Districts in Westmoreland County..... 2-18
2-8.	Unemployment Rate for Westmoreland County and Pennsylvania, 2002 – 2012..... 2-19
2-9.	Change in Number of Jobs, 2007 - 2011 ..... 2-20
2-10.	Net Commuting Flows, 2011 ..... 2-21
4.3.1 1.	Slab Avalanche ..... 4.3.1-1
4.3.1 2.	North American Avalanche Danger Scale ..... 4.3.1-2
4.3.2-1.	Climate Divisions of Pennsylvania..... 4.3.2-3
4.3.2-2.	Palmer Drought Severity Index for Pennsylvania (1895 to 1995)..... 4.3.2-12
4.3.3-1.	Pennsylvania Earthquake Hazard Zones..... 4.3.3-3
4.3.3-2.	Lamont-Doherty Seismic Stations Locations in Western Pennsylvania..... 4.3.3-4
4.3.3-3.	USGS Seismic Stations in Pennsylvania ..... 4.3.3-5
4.3.3-4.	Earthquake Epicenters in the Northeast 1990 – 2010..... 4.3.3-6
4.3.3-5.	Peak Ground Acceleration Modified Mercalli Scale in Westmoreland County for a 100-Year MRP Earthquake Event..... 4.3.3-9
4.3.3-6.	Peak Ground Acceleration Modified Mercalli Scale in Westmoreland County for a 500-Year MRP Earthquake Event..... 4.3.3-10
4.3.3-7.	Peak Ground Acceleration Modified Mercalli Scale in Westmoreland County for a 2,500-Year MRP Earthquake Event..... 4.3.3-11
4.3.3-8.	Earthquake Epicenters in Pennsylvania ..... 4.3.3-12
4.3.4-1.	Average Maximum Temperature throughout Pennsylvania (1971 and 2000)..... 4.3.4-1
4.3.4-2.	Average Minimum Temperature throughout Pennsylvania (1971 to 2000) ..... 4.3.4-2
4.3.4-3.	NWS Heat Index Chart ..... 4.3.4-3
4.3.4-4.	NWS Wind Chill Index..... 4.3.4-4
4.3.5-1	Floodplain Illustration..... 4.3.5-4
4.3.5-2	NFIP Floodplains in Westmoreland County..... 4.3.5-5
4.3.6-1.	Hail Formation ..... 4.3.6-2
4.3.6-2.	Annual Frequency of Hailstorms in the U.S. .... 4.3.6-3
4.3.6-3.	Total Annual Threat of Hail Events (0.75-inch diameter or greater) in the U.S., 1980 to 1999 ..... 4.3.6-4
4.3.6-4.	Hail Events Per Square Mile in Pennsylvania ..... 4.3.6-8



4.3.7-1. Historical Tropical Storm and Hurricane Tracks 1856 – 2012.....4.3.7-3

4.3.7-2. Wind Speeds for the 100-Year Mean Return Period Event in Westmoreland County.4.3.7-5

4.3.7-3. Wind Speeds and Storm Track for the 500-Year Mean Return Period Event in Westmoreland County. ....4.3.7-6

4.3.7-4. Probability of a Hurricane or Tropical Storm across Pennsylvania.....4.3.7-13

4.3.7-5. Number of Hurricanes for a 100-year Return Period.....4.3.7-14

4.3.8-1. U.S Geological Survey. Landslide Incidence and Susceptibility.....4.3.8-2

4.3.9-1. Weather Fatalities in the United States .....4.3.9-4

4.3.10-1. Sketch of Radon Entry Points into a House.....4.3.10-2

4.3.10-2. Radon Hazard Zones in Pennsylvania .....4.3.10-3

4.3.10-3. Percentage of Pennsylvania homes having radon levels greater than 4 pCi/L .....4.3.10-6

4.3.11-1. Westmoreland County Geology.....4.3.11-3

4.3.11-2. Areas of Pennsylvania Subject to Natural Subsidence Due to the Presence of Limestone Bedrock.....4.3.11-4

4.3.11-3. Westmoreland County Limestone Bedrock Geology .....4.3.11-5

4.3.11-4. Abandoned Mines in Westmoreland County .....4.3.11-6

4.3.12-1. Land Cover in Westmoreland County .....4.3.12-2

4.3.12-2. Location of Wildfire Events responded to by BOF from 2002-2013 .....4.3.12-3

4.3.12-3. 2010 WUI for Pennsylvania.....4.3.12-5

4.3.12-4. WUI for Westmoreland County.....4.3.12-6

4.3.12-5. Observed Fire Danger Map (February 22, 2012).....4.3.12-8

4.3.12-6. Wildfire Priority Landscapes in Westmoreland County .....4.3.12-10

4.3.13-1. Wind Zones in the U.S.....4.3.13-3

4.3.13-2. Annual Average Number of Tornadoes in the U.S., 1981 to 2010.....4.3.13-5

4.3.13-3. Tornado Risk in the U.S. ....4.3.13-6

4.3.13-4. Total Annual Threat of Tornado Events in the U.S., 1980-1999 .....4.3.13-7

4.3.13-5. Pennsylvania Tornado History.....4.3.13-10

4.3.14-1. Annual Snowfall .....4.3.14-4

4.3.15-1. Dams in Westmoreland County .....4.3.15-13

4.3.16-1. Major Roadways Used to Transport Hazardous Materials in Westmoreland County .....4.3.16-3

4.3.18-1. Beaver Valley Power Station .....4.3.18-2

4.3.18-2. Westmoreland Jurisdictions in the 50-Mile Ingestion Zone .....4.3.18-3

4.3.20-1. Major Roadways in Westmoreland County.....4.3.20-3

4.3.20-2. Airports in Westmoreland County .....4.3.20-5

## SECTION 1: INTRODUCTION

### 1.1 Background

In response to the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), Westmoreland County, and its inclusive municipalities, have developed this Multi-Jurisdictional Hazard Mitigation Plan (HMP) which is an update of the 2009 Westmoreland County HMP. DMA 2000 amends the Stafford Act and is designed to improve planning for, response to, and recovery from, disasters by requiring State and local entities to implement pre-disaster mitigation planning and develop HMPs. The Federal Emergency Management Agency (FEMA) has issued guidelines for HMPs. The Pennsylvania Emergency Management Agency (PEMA) also supports plan development for jurisdictions in the Commonwealth.

Specifically, DMA 2000 requires that local governmental agencies, with support from their States and Federal government, update HMPs on a five year basis to prepare for and reduce the potential impacts of natural hazards. DMA 2000 is intended to facilitate cooperation between state and local authorities, prompting them to work together. This enhanced planning will better enable local and State governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects.

#### **Hazard Mitigation**

is any sustained action taken to reduce or eliminate the long term risk and effects that can result from specific hazards.

FEMA defines a **Hazard Mitigation Plan** as

the documentation of a state or local government evaluation of natural hazards and the strategies to mitigate such hazards.

#### 1.1.1 DMA 2000 Origins -The Robert T. Stafford Disaster Relief and Emergency Assistance Act

In the early 1990s a new federal policy regarding disasters began to evolve. Rather than simply reacting whenever disasters strike communities, the federal government would encourage communities to first assess their vulnerability to various disasters and then take actions to reduce or eliminate potential risks. The logic is simply that a disaster-resistant community can rebound from a natural disaster with less loss of property or human injury, at much lower cost, and, consequently, more quickly. Moreover, other costs associated with disasters, such as the time lost from productive activity by business and industries, are minimized.

The **Federal Emergency Management Agency (FEMA)** estimates that for every dollar spent on damage prevention (mitigation), twice that amount is saved through avoided post-disaster damage repair.

### 1.2 Purpose

DMA 2000 provides an opportunity for States, tribes and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of requirements (Section 322). This section sets forth the requirements that communities evaluate natural hazards within their respective jurisdictions and develop an appropriate plan of action to mitigate those hazards, while emphasizing the need for State, tribal and local governments to closely coordinate mitigation planning and implementation efforts.

The amended Stafford Act requires that each local jurisdiction identify potential natural hazards to the health, safety and well-being of its residents and identify and prioritize actions that can be taken by the community to mitigate those hazards—before disaster strikes. For communities to remain eligible for

hazard mitigation assistance from the federal government, they must first prepare and maintain a FEMA-approved HMP (this plan).

The planning process will help prepare citizens and government agencies to better respond when disasters occur. Also, mitigation planning allows Westmoreland County and its municipalities to remain eligible for mitigation grant funding for mitigation projects that will reduce the impact of future disaster events. The long-term benefits of mitigation planning include:

- An increased understanding of hazards faced by communities
- A more sustainable and disaster-resistant community
- Financial savings through partnerships that support planning and mitigation efforts
- Focused use of limited resources on hazards that have the biggest impact on the community
- Reduced long-term impacts and damages to human health and structures and reduced repair costs

### 1.3 Scope

DMA 2000 and its implementing regulations at 44 CFR 201.6 require that all local governments have a FEMA-approved Local Hazard Mitigation Plan, formally updated every five years, in order to be eligible for state and federal mitigation funding. Both counties and all municipalities were invited to participate in the 2012 regulatory update process in order to maintain their eligibility for mitigation funding. However, both active participation and subsequent adoption of the updated plan by each jurisdiction is required to meet FEMA's local mitigation planning requirements and the expectations of FEMA plan reviewers.

#### 1.3.1 Organizations Involved in the Mitigation Planning Effort

Westmoreland County and the participating jurisdictions intend to implement this plan with full coordination and participation of County and local departments, organizations and groups, as well as by coordinating with relevant State and Federal entities. Coordination helps to ensure that all such stakeholders have established communication channels and relationships necessary to support mitigation planning and mitigation actions included in Section 6.

In total, 49 jurisdictions within Westmoreland County have participated in the planning process as indicated in Table 1-1.

*Table 1-1. Jurisdictions Participating in the 2014 Update*

Participating Jurisdictions			
<b>WESTMORELAND COUNTY</b>			
Allegheny Township	Hunker	Murrysville	Sewickley Township
Avonmore	Irwin	New Alexandria	Smithton
Cook Township	Latrobe	New Kensington	South Greensburg
Delmont	Laurel Mountain	New Stanton	South Huntingdon
Derry Borough	Ligonier Borough	North Belle Vernon	Southwest Greensburg
Derry Township	Ligonier Township	North Huntingdon Township	St. Clair Township

Participating Jurisdictions			
Donegal Borough	Loyalhanna Township	North Irwin	Unity Township
Donegal Township	Madison	Oklahoma	Upper Burrell
East Huntingdon	Manor	Penn Township	Washington Township
East Vandergrift	Monessen	Rostraver Township	West Leechburg
Fairfield Township	Mount Pleasant Borough	Salem Township	West Newton
Greensburg	Mount Pleasant Twp.	Scottdale	Youngwood
Hempfield Township			

While primary responsibility for the development and implementation of mitigation strategies and policies lies with local governments, various partners and resources at the regional, state and federal levels are available to assist communities in the development and implementation of mitigation strategies. Within the Commonwealth of Pennsylvania, PEMA is the lead agency providing hazard mitigation planning assistance to local jurisdictions, through the State's administration of the Federal mitigation grant programs, as well as providing guidance, tools and training to support mitigation planning and plan implementation.

Additional input and support for this planning effort was obtained from a range of agencies and through public involvement, as discussed in Section 3 (Planning Process). This plan update process was managed by Westmoreland County Department of Public Safety. Oversight for the preparation of this plan update was provided by Westmoreland County Hazard Mitigation Working Group assembled for this update process.

Throughout the planning process, Westmoreland County utilized the services of Tetra Tech Inc. (Tetra Tech) in the capacity of consultant to provide assistance in preparation of the plan. Tetra Tech was present and participated in meetings as noted in Section 3 (Planning Process). Tetra Tech developed the plan, reviewed and compiled hazard data, performed risk analyses, hazard identification and profiling, vulnerability analyses, supported the updating of plan goals, objectives and mitigation strategies, provided planning support, and authored the plan with input from the County, municipalities, Working Group and stakeholders.

Responsibility for fulfilling the requirements of Section 322 of the Stafford Act and administering the FEMA Hazard Mitigation Program has been delegated to the Commonwealth, specifically to PEMA. FEMA also provides support through guidance, resources, and plan reviews.

## 1.4 Authority and References

This HMP was prepared in accordance with the following regulations and guidance:

- DMA 2000 (Public Law 106-390, October 30, 2000).
- 44 Code of Federal Regulations (CFR) Parts 201 and 206 (including: Feb. 26, 2002, Oct. 1, 2002, Oct. 28, 2003, and Sept. 13, 2004 Interim Final Rules).
- FEMA Local Mitigation Plan Review Guide, October 1, 2011
- Pennsylvania's All-Hazard Mitigation Planning Standard Operating Guide (October 2010).



Table 1-2 summarizes the requirements outlined in the DMA 2000 Interim Final Rule and where each of these requirements is addressed in this HMP.

*Table 1-2 FEMA Local Mitigation Plan Crosswalk*

Plan Criteria	Primary Location in Plan
<b>Prerequisites</b>	
Adoption by the Local Governing Body: §201.6(c)(5)	Section 8.0; Appendix F
<b>Planning Process</b>	
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	Section 3.0; Appendices C, D, E
<b>Risk Assessment</b>	
Identifying Hazards: §201.6(c)(2)(i)	Section 4.2
Profiling Hazards: §201.6(c)(2)(i)	Section 4.3
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Section 4.3
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Section 4.3
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Section 4.3
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Section 2.0
<b>Mitigation Strategy</b>	
Local Hazard Mitigation Goals: §201.6(c)(3)(i)	Section 6.3;
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	Section 6.4
Implementation of Mitigation Actions: §201.6(c)(3)(iii)	Section 6.6
Multi-Jurisdictional Mitigation Actions: : §201.6(c)(3)(iv)	Section 6.4
<b>Plan Maintenance Process</b>	
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	Section 7.1
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	Section 7.2
Continued Public Involvement: §201.6(c)(4)(iii)	Section 7.3

A vast wealth of data, information, plans and reports were researched and used in the development of this plan update, as comprehensively documented in Appendix A, “References”.

## 1.5 Summary of Changes in the Plan Update

This document represents a comprehensive update to the 2009 Westmoreland County Hazard Mitigation Plan. Significant changes and areas of update are summarized below.

### 1.5.1 Organization

One of the benefits of multi-jurisdictional planning is the ability to pool resources and eliminate redundant activities within a planning area that has uniform risk exposure and vulnerabilities. FEMA encourages multi-jurisdictional planning under its guidance for the DMA.

This HMP meets the requirements of all elements of Section 201.6 of 44CFR that apply to the entire planning area. This includes the description of the planning process, public involvement strategy, hazard risk assessment, goals and objectives, regional mitigation capabilities and initiatives, and a plan maintenance strategy. To the greatest extent practical, the HMP update has been organized according to the Model Plan Outline identified in Pennsylvania's All-Hazard Mitigation Planning Standard Operating Guide (PEMA SOG).

A summary of the overall plan organization is provided at the end of this Section.

### 1.5.2 Risk Assessment

This 2014 update has expanded on the hazard profiling and risk assessment efforts in the 2009 plan. In addition to updating the hazard profiles and risk assessment for the natural hazards that pose significant risk to Westmoreland County, this update has greatly expanded its consideration of those human-caused and technological (non-natural) hazards that pose risk to the region. The potential impacts of climate change as an exacerbating factor have been included for each hazard, where applicable.

While the 2009 plan presented the vulnerability assessment for specific natural hazards separately from their profiles, hazard profiling and risk assessment/vulnerability assessment information are provided in a single, unified profile for each hazard of concern addressed in this update.

This update has also provided County and local risk rankings, allowing a relative comparison of risk for the natural and non-natural hazards within the county and all participating municipalities, developed using the PEMA risk-factor methodology. Relative risk rankings may be used to focus and prioritize the jurisdictional mitigation strategies.

### 1.5.3 Capability Assessment

This update has updated the thorough regional and local capability assessment provided in the 2009 Plan. Regional capabilities are presented in Section 5 (Capability Assessment), along with a summary of local mitigation capabilities.

### 1.5.4 Mitigation Strategies

Progress on county and local mitigation strategies identified in the 2009 plan are provided in Section 6.5 of this Plan. Those actions and initiatives being carried forward in the 2014 update have been expanded with further information and details to support implementation. Actions being carried forward, as well as new actions identified during this update process are included in Section 6. Further, the PA STEEL

mitigation action evaluation methodology specified in the PEMA SOG has been used to help prioritize each jurisdiction's strategy, as documented in each jurisdictional annex.

A major focus of this update effort has been to identify effective, actionable, and well-defined mitigation actions and initiatives at both the county and local level.

#### 1.5.5 Plan Integration into Other Planning Mechanisms

It is the intention of this planning process that municipalities shall incorporate the findings and recommendations of this plan into future local planning efforts and into overall execution of their land-use planning process (e.g. comprehensive planning, site plan review, permitting, and code enforcement).

The integration of hazard mitigation, including the findings and recommendations of the 2009 HMP and this update, into other related planning mechanisms in Westmoreland County is identified throughout this plan update. The Section 5 Capability Assessment identifies and describes the various plans, programs and mechanisms to support and effect mitigation in Westmoreland County, including a discussion of those that have been updated or adopted since the 2009 plan. Section 3.6 of the Planning Process discusses how these plans, programs and mechanisms were integrated into the plan update process, and how this integration/coordination will continue in Westmoreland County as the 2014 update is implemented. Further, each jurisdictional annex identifies those planning and regulatory mechanisms that have been adopted and/or updated in each municipality, and identifies specific actions and initiatives to expand and enhance their local risk management capabilities.

## 1.6 Organization of Mitigation Plan

This plan was organized with consideration of both FEMA and PEMA guidance: It includes all information that applies to the entire planning area (Westmoreland County and its inclusive municipalities).

This Plan includes the following sections:

**Section 1:** Introduction: Identifies the purpose and authorities for mitigation planning, the scope of this plan update effort, and provides a summary and overview of the plan update process and those changes that have been made to the 2009 plan.

**Section 2:** County Profile: An overview of Westmoreland County, including location, history, government and political subdivisions, physical setting, land use and development trends, population and demographics.

**Section 3:** Planning Process: A description of the Plan methodology and development process, Steering Committee and stakeholder involvement efforts, and a description of how this Plan will be incorporated into existing programs.

**Section 4:** Risk Assessment: Documentation of the hazard identification and hazard risk ranking process, hazard profiles, and findings of the vulnerability assessment (estimates of the impact of hazard events on life, safety and health; general building stock; critical facilities and the economy). Description of the status of local data and planned steps to improve local data to support mitigation planning.

**Section 5:** Capability Assessment: evaluates the capabilities and resources that are already in place in a community to reduce hazard risks. The capability assessment looks at the resources in place at the

municipal, county, state and federal levels. The assessment also identifies where improvements can be made to increase disaster resistance in the community.

**Section 6:** Mitigation Strategies: A discussion of how the original mitigation goals and objectives were evaluated, and the process by which the county and local mitigation strategies were updated.

**Section 7:** Plan Maintenance Procedures: The system established by Westmoreland County Steering Committee to continue to monitor, evaluate, maintain and update the plan.

**Section 8:** Plan Adoption: Information regarding the adoption of the updated plan by both counties and each participating jurisdiction.

### 1.6.1 Appendices

**Appendix A** – References: Comprehensive documentation of the sources of all data and information used in the development of this plan update.

**Appendix B** – Local Plan Review Crosswalk: Worksheet used by FEMA Region III plan reviewers to document compliance of this updated plan with 44 CFR 201.6 requirements.

**Appendix C** - Meeting Documentation: Agendas, minutes, and sign-in sheets of major meetings convened during the planning process.

**Appendix D** – Municipal Participation Documentation: Worksheets, survey forms and other information provided by municipalities and local stakeholders during the update process.

**Appendix E** – Public and Stakeholder Documentation: Copies of surveys, media releases, articles, public notices, websites and documentation of other mechanisms used to inform the public of the hazard mitigation planning effort and provide input, including specific public and stakeholder comments received throughout the planning process.

**Appendix F** – Sample Adoption Resolution: Draft resolution available for use by each jurisdiction during the plan adoption process.

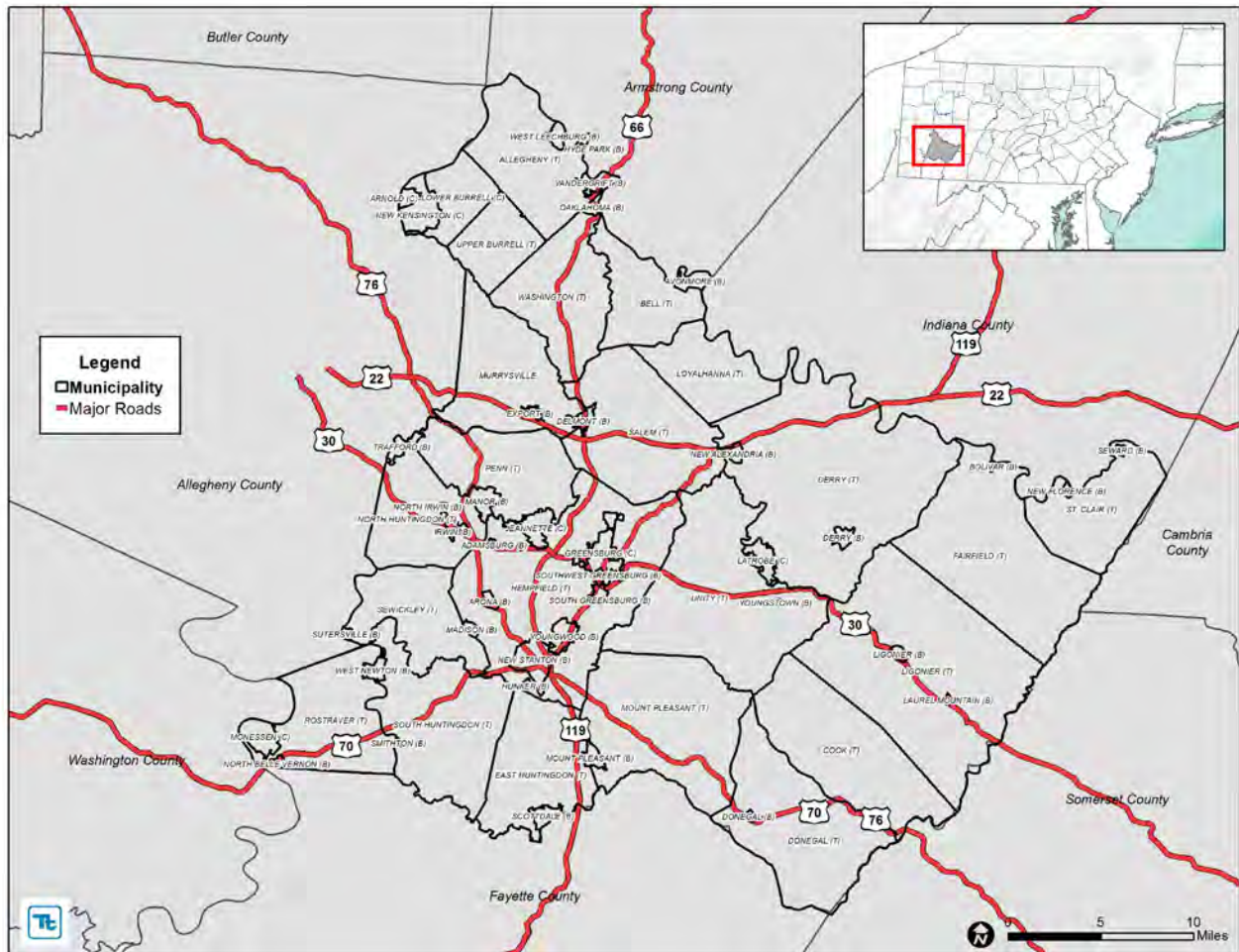
## SECTION 2: COUNTY PROFILE

This profile describes the general information of Westmoreland County including the physical setting, population and demographics, land use, households, population trends, and economic profile. In Section 4 of this document, specific profile information is presented and analyzed to develop an understanding of the study area, including the economic, structural, and population assets at risk and the particular concerns that may be present related to hazards analyzed (for example, a high percentage of vulnerable persons in an area).

### 2.1 Location

Westmoreland is the second largest county in southwestern Pennsylvania in terms of population and the largest by landmass with the county encompassing 1,036 square miles of cities, farm and forest land. The County is bordered to the east by Cambria County and Somerset County, to the north by Indiana County and Armstrong County, to the northwest by Butler County, to the west by Allegheny County and to the south by Washington County and Fayette County. Figure 2-1 displays Westmoreland County and its municipalities.

*Figure 2-1. Westmoreland County*





## 2.2 History

Westmoreland County was established on February 26, 1773, by the Act of Assembly. It was the first county west of the Allegheny Mountains, and the 11<sup>th</sup> (and last) county established by the Colony of Pennsylvania. Its territory originally included the whole southwestern corner of Pennsylvania (16 current counties). It was named after Westmoreland County in northwestern England.

The first court hearing was held in Robert Hanna's home, a site now listed on the National Register as being historically significant. The first county seat was located in Hanna's Town (later called Hannastown) near Greensburg, and is remembered for the Hanna's Town Resolves of May 16, 1775. The Resolves stated that the settlers, along with Arthur St. Clair, would bind themselves together and take up arms if necessary to resist further tyrannical acts of Parliament. More than one year later, a Declaration of Independence was signed in Philadelphia. Hannastown was destroyed by fire by the Seneca Indians, led by Chief Guyasota on July 13, 1782, and the county seat was relocated to Greensburg shortly thereafter. The first court in the new Greensburg county seat took place in 1797 in a log cabin where the current county courthouse is located.

After the Colonial War for Independence, five counties were carved from the original boundary of Westmoreland County, and after 1800, eleven other counties were created in part from these counties. Since 1803, Westmoreland County has had the same boundary lines as it has today.

Several great political leaders, veterans, and visionary entrepreneurs were either born in Westmoreland County or somehow made a mark on the community: Henry Clay Frick, Thomas Mellon, General Richard Coulter, George F. Huff, Robert S. Jamison, William Findley, John Covode, William Freame Johnson, John White Geary, Edgar Cowan, Joseph Finch Guffey, and Cyrus E. Woods.

The first federal census of 1790 recorded a population of 16,018, although boundaries have since shifted. By the beginning of the 20<sup>th</sup> Century, economic opportunity in the county's mills and mines brought Italian and Slavic immigrants in large numbers. Other immigrant backgrounds include German, Irish, Scotch-Irish, eastern and southern European countries, and African-Americans from the southern part of the United States.

Throughout the 20<sup>th</sup> Century, Westmoreland County reflected the nation's industrial growth and change that followed. Agriculture served as the county's economic base for most of the nineteenth century. After the Civil War, the county relied upon the metals and mining industries for its economic base; these industries dominated the communities in which they were located. By the end of the 1950s, Westmoreland County ranked fifth among Pennsylvania's counties in the mining of bituminous coal. New Kensington, Pennsylvania, became the center of the aluminum industry in the United States, and Monessen led the county in steel and tin plate production, producing immense quantities of woven wire and tubes. The glass industry was centered in Jeannette where six different plants produced glass for almost every domestic, industrial and military use. Glass was also manufactured in Mt. Pleasant, Greensburg, and Arnold. Large population centers developed around these cities.

In the 1970s and 1980s, the demise of the steel industry in the United States was mirrored in Westmoreland County, as over 40 percent of manufacturing jobs were lost after 1980. Coal also experienced more than a 50 percent reduction in jobs during the same period. Westmoreland County's economy continues to change. New industrial parks and the development of small businesses have led the way to a diversification of the county's economy. Traditional employers such as Alcoa, Allegheny Ludlum Steel, Elliott Company, and Kennametal still form a significant part of the county's economic base. The addition of many small firms such as specialty machine shops, fabrication, and electronic businesses continue to grow.



Changes in the county's economy have also resulted in changing where people reside. The county's boroughs and cities are no longer major employment centers and are slowly losing population to the first and second class townships where land and infrastructure are abundant. Suburban growth continues to take place in areas such as Hempfield Township, Penn Township, Unity Township, and Murrysville, which have gained steadily in population. Many county residents still find employment in the City of Pittsburgh or outside of Westmoreland County; therefore, these communities have become "bedroom communities" for those who make the commute.

From its first federal census in 1790, Westmoreland has grown from a population of 16,018 to a population of 365,169 as of the 2010 Census. Westmoreland County has had the same boundary lines and acreage since 1803. Today, it is the Pennsylvania's seventh largest county, in land area, of the state's 67 counties. Westmoreland County is the tenth largest county in the Commonwealth in terms of population.

### 2.3 Government and Political Subdivisions

Westmoreland County is comprised of 65 municipalities. The political jurisdictions include 21 townships, 36 boroughs, 5 cities, and 3 home rule municipalities. The following table represents the political jurisdictions that comprise Westmoreland County.

*Table 2-1. Westmoreland Political Jurisdictions*

Townships	Boroughs	Cities	Home Rule
• Allegheny	• Adamsburg	• New Florence	• Greensburg
• Bell	• Arona	• New Stanton	• Latrobe
• Cook	• Avonmore	• North Belle Vernon	• Murrysville
• Derry	• Bolivar	• North Irwin	
• Donegal	• Delmont	• Oklahoma	
• East Huntingdon	• Derry	• Penn	
• Fairfield	• Donegal	• Scottdale	
• Hempfield	• East Vandergrift	• Seward	
• Ligonier	• Export	• Smithton	
• Loyalhanna	• Hunker	• South Greensburg	
• Mount Pleasant	• Hyde Park	• Sutersville	
• North Huntingdon	• Irwin	• Trafford	
• Penn	• Laurel Mountain	• Vandergrift	
• Rostraver	• Ligonier	• West Leechburg	
• Salem	• Madison	• West Newton	
• Sewickley			

Townships	Boroughs	Cities	Home Rule
<ul style="list-style-type: none"> <li>• South Huntingdon</li> <li>• St. Clair</li> <li>• Unity</li> <li>• Upper Burrell</li> <li>• Washington</li> </ul>	<ul style="list-style-type: none"> <li>• Manor</li> <li>• Mount Pleasant</li> <li>• New Alexandria</li> <li>• Youngstown</li> <li>• Youngwood</li> </ul>		

Source: Westmoreland County Department of Planning and Development, 2010

The Pennsylvania Constitution provides that the State Legislature classify local governments according to population size. Westmoreland County is considered a Third-Class Pennsylvania County, as its population according to the 2010 U.S. Census was in the 250,000 to 500,000 range.

## 2.4 Physical Setting

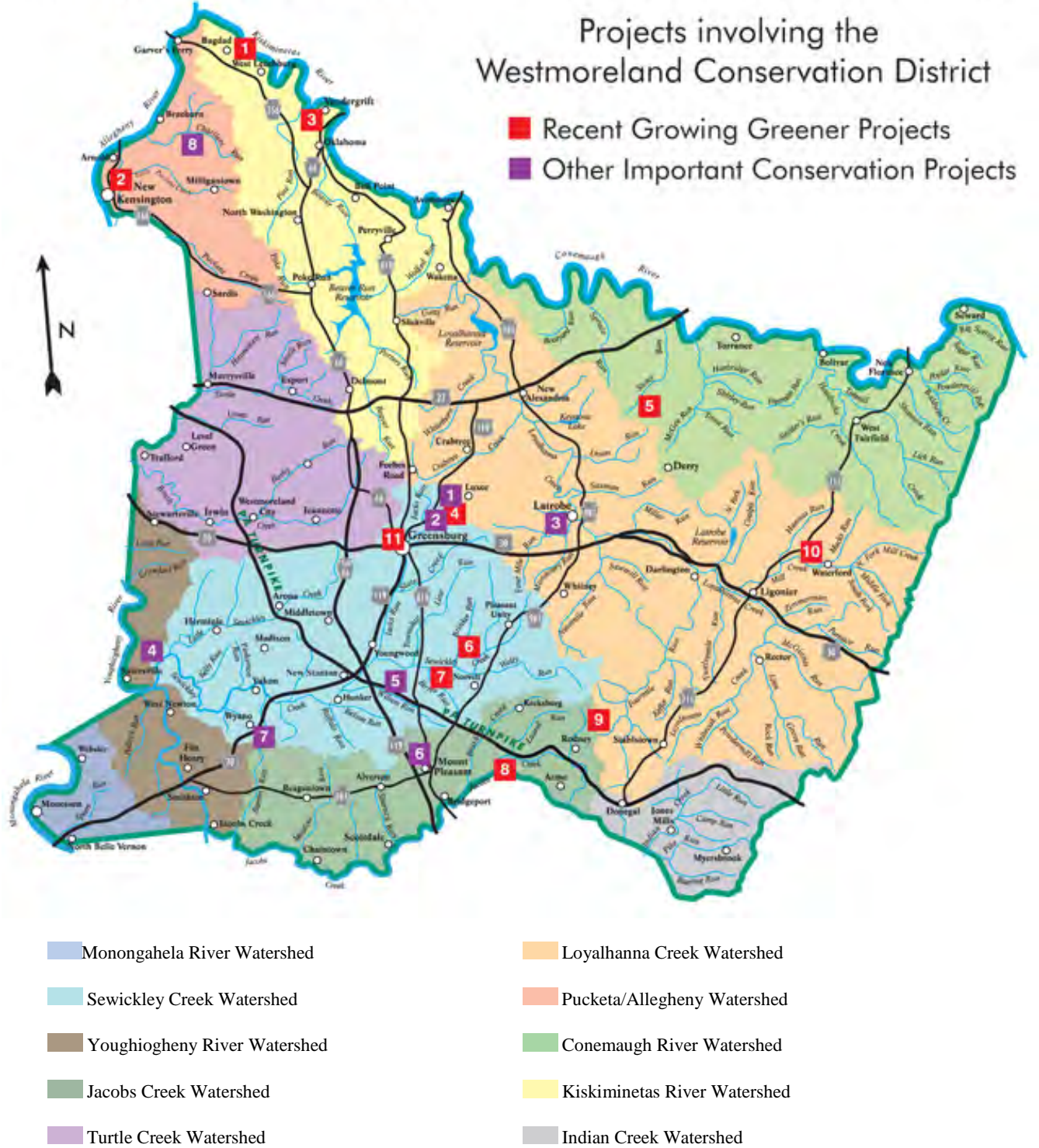
This section presents the physical setting of Westmoreland County, including: hydrography and hydrology, topography and geology, climate, and land use/land cover.

### 2.4.1 Hydrography and Hydrology

Westmoreland County lies entirely within the Ohio River Basin, one of four major drainage basins in Pennsylvania. Just as there are a number of towns, cities, and boroughs in Westmoreland County, there also are a number of different watersheds. The boundaries of these watersheds are determined by nature; particularly by the way water flows across the land. Westmoreland County contains ten major watersheds, as shown below in Figure 2-2.

Figure 2-2. Watersheds

# Major Watersheds In Westmoreland County



Source: Westmoreland Conservation District 2014

Every major watershed in Westmoreland County is overseen by a specific watershed association. Each association undertakes specific projects to enhance the quality of its local area. Some of the major watershed associations and their websites are depicted in Table 2-2.

**Table 2-2. Watershed Associations**

Association	Website
Loyalhanna Watershed Association, Inc.	<a href="http://www.loyalhannawatershed.org">www.loyalhannawatershed.org</a>
Mountain Watershed Association	<a href="http://www.mtwatershed.com">www.mtwatershed.com</a>
Sewickley Creek Watershed Association	<a href="http://www.sewickleycreek.com">www.sewickleycreek.com</a>
Turtle Creek Watershed Association	-
Pucketa and Chartiers Watershed Association	-
Jacobs Creek Watershed Association	<a href="http://www.jacobs creek watershed.org/">http://www.jacobs creek watershed.org/</a>
Kiskiminetas Watershed Association	-

Source: Westmoreland Conservation District, 2014

All of the creek-based watersheds either have watershed plans or assessments in place, or are currently developing such plans. In addition, the Turtle Creek watershed is the only watershed in the County that has an Act 167 plan in place, which is in need of an update.

**Table 2-3. Stormwater Management Plans for Westmoreland County**

Title	Year
Westmoreland County Phase I Act 167 Stormwater Management Plan	June 2010
Turtle Creek Watershed Act 167 Stormwater Management Plan	1991

Source: Westmoreland County Department of Planning and Development, 2010

#### 2.4.2 Topography

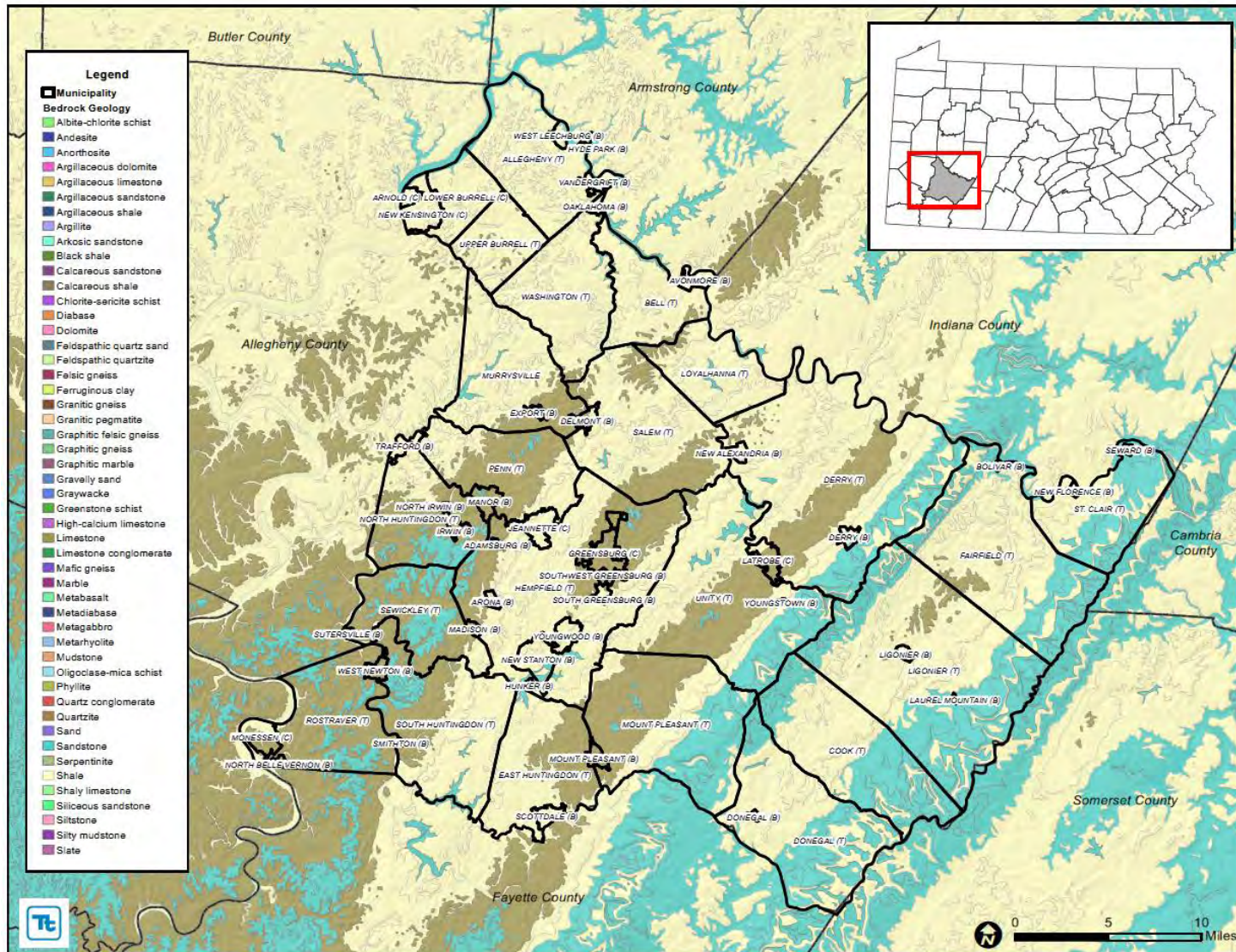
Westmoreland County is part of the Laurel Highlands and lies on the northeastern end of the soft coal fields on the Appalachian plateau, with the eastern part lying within the Allegheny Foothills. The highest elevation is 2,960 feet above Mean Sea Level (MSL) at Birch Rock Hill on Laurel Hill, and the lowest elevation of approximately 740 feet above MSL is located at the Allegheny River in New Kensington. A significant amount of land in Westmoreland County is classified by the United States Geological Survey (USGS) mapping as having excessive slopes (exceeding 25 percent), and therefore is considered unsuitable or marginally suitable for development. Variations in aspect, slope, and elevation combine to create a number of different microenvironments throughout the county.

### 2.4.3 Geology

According to the Pennsylvania Bureau of Topographic and Geologic Survey, approximately 21 percent of Westmoreland County (219.3 miles) is underlain by carbonate bedrock. The remaining 79 percent is composed of mainly Shale and Sandstone. Figure 2-3 illustrates the bedrock geology of Westmoreland County.



Figure 2-3. Westmoreland County Geology



Source: Pennsylvania Bureau of Topographic and Geologic Survey 2001



#### 2.4.4 Climate

The humid continental climate of Westmoreland County is characterized by warm summers and cold winters. Almost daily changes in weather occur in winter and spring. From December through the early part of March, cold spells accompanied by brisk northwesterly winds occasionally last for several days. In summer and fall, changes are less frequent; the weather remains essentially the same for a few days to a week or more. For extended periods in the summer, days are sunny, hot and humid, cooled only by an afternoon shower and nights are warm. Dry, sunny days and cool, clear nights are typical of the fall.

Most of the local climate variations within the county result from differences in topography. Due to higher elevation and more rugged terrain, the eastern part has lower temperatures and more cloudiness, precipitation and thunderstorms than the central and western portions of Westmoreland County. Variations in the central and western parts are confined mainly to night-time drops in temperature that result from cool air drainage. Where air drainage is relatively poor, as it is in valleys, temperatures are lower and growing seasons are shorter than in surrounding high terrain. The warmest parts of the county are the valleys of the Monongahela River and Youghiogheny River, where the average annual temperature is 55 degrees Fahrenheit. The average annual temperature is 50 degrees in most of the central areas and 45 degrees in the Chestnut Ridge and Laurel Hill areas in the eastern portion of the County.

The average winter daily high temperature is 39 with an average low of 24 degrees. The average summer daily high temperature is 84 degrees, with the average daily low of 61 degrees.

Winters are cold and snowy at the higher elevations in the county. They are frequently cold in the valleys, but intermittent thaws preclude a long-lasting snow cover. Summers are fairly warm on the mountain slopes, but are usually very warm with occasional very hot days in the valleys. Rainfall is evenly distributed during the year, but it is appreciably heavier on the windward, west-facing slopes than in the valleys. The normal annual precipitation is adequate for all crops, although the summer temperature and the length of the growing season, particularly at the higher elevations, may be inadequate. Average annual total precipitation is somewhat variable across Westmoreland County. It ranges from about 40 inches across the western and northwestern parts of the county, to about 52 inches in the extreme southeast corner of the county, in the higher elevation area on the border with Somerset and Fayette Counties (near the Seven Springs Ski Area). At Derry, the average annual amount is about 48.80 inches. Of this, about 23.4 inches, or 48 percent, usually falls in May through September.

The average seasonal snowfall varies throughout the county due to topographical differences. The average snowfall in the western portion of the county is 25 inches, compared to 40 inches in the central part, and 80 inches in the eastern portion of the county. The greatest snow depth at any one time during the period of record was 84 inches (Westmoreland County Department of Planning and Development, 2010).

Additional information and data on climate in Westmoreland County may be found through the following source:

- Pennsylvania State Climatologist Website - <http://climate.met.psu.edu>

#### 2.4.5 Land Use and Land Cover

According to Westmoreland County Department of Planning and Development, the following estimates apply:

- Approximately 52,104 acres (7.9 percent of total county acreage) was developed prior to 1967, and
- Approximately 24,962 acres were developed between 1967 and 2003. This represents 3.8 percent of the total acreage of the county, or 5.6 percent of the county's developable acreage.

Thus, 11.7 percent of the total acreage in the county (17.3 percent of developable land) has been developed. The average rate of development between 1967 and 2003 was 693 acres/year. Using this rate of growth, projecting new development to the year 2040 would result in approximately 15.6 percent of total land developed, or 22.9 percent of developable land.

Preserved lands, such as flood plains, steep slopes, wetlands, open space, parks, gamelands, campgrounds, reservoirs, agricultural security areas, and golf courses, account for 210,748 acres, or 32 percent of the total land acreage in Westmoreland County. The remaining 56 percent of total land acreage (368,186 acres) is occupied by rural/very low-density residential uses, unprotected farms and/or forests, vacant land and other uses.

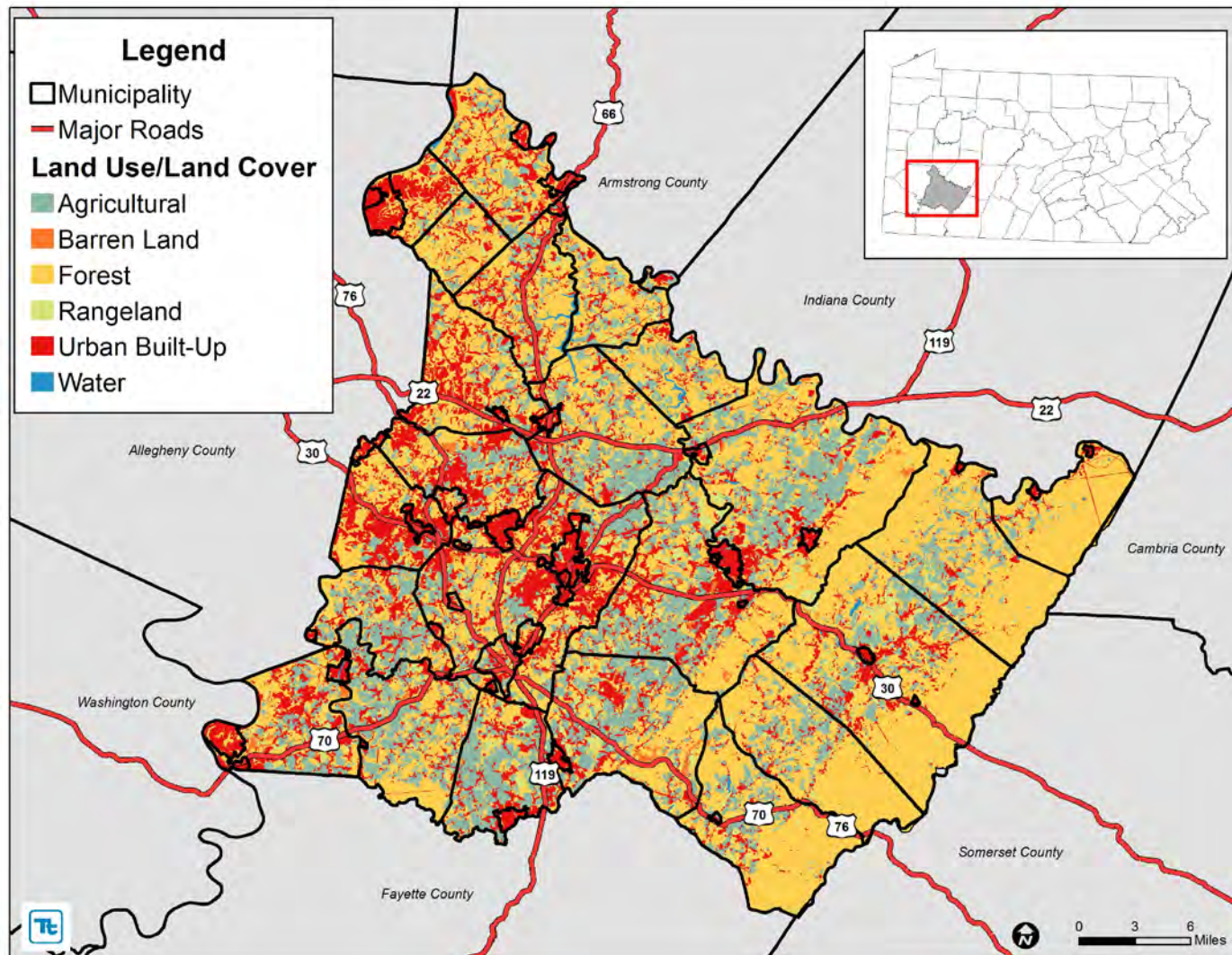
For purposes of this analysis, the county has been classified in terms of eight major land uses that make up the 656,000 acres or 1,025 square miles in Westmoreland County: residential (low- and high-density areas), commercial, industrial, rural/agricultural, forested/wooded, barren land, and recreational/environmental.

Most development in Westmoreland County is concentrated in an urban/suburban development triangle that is bounded roughly by New Kensington, Latrobe, and Monessen. Outside of this triangle, the county is comprised of small towns and residential neighborhoods interspersed with farms, forested lands, and rolling hills.

Figure 2-4 shows existing land use in Westmoreland County.



Figure 2-4. Existing Land Use



#### 2.4.6 Development Trends and New Development:

Land use regulatory authority is vested in Pennsylvania's cities, boroughs and townships. However, many development and preservation issues transcend political boundaries. DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

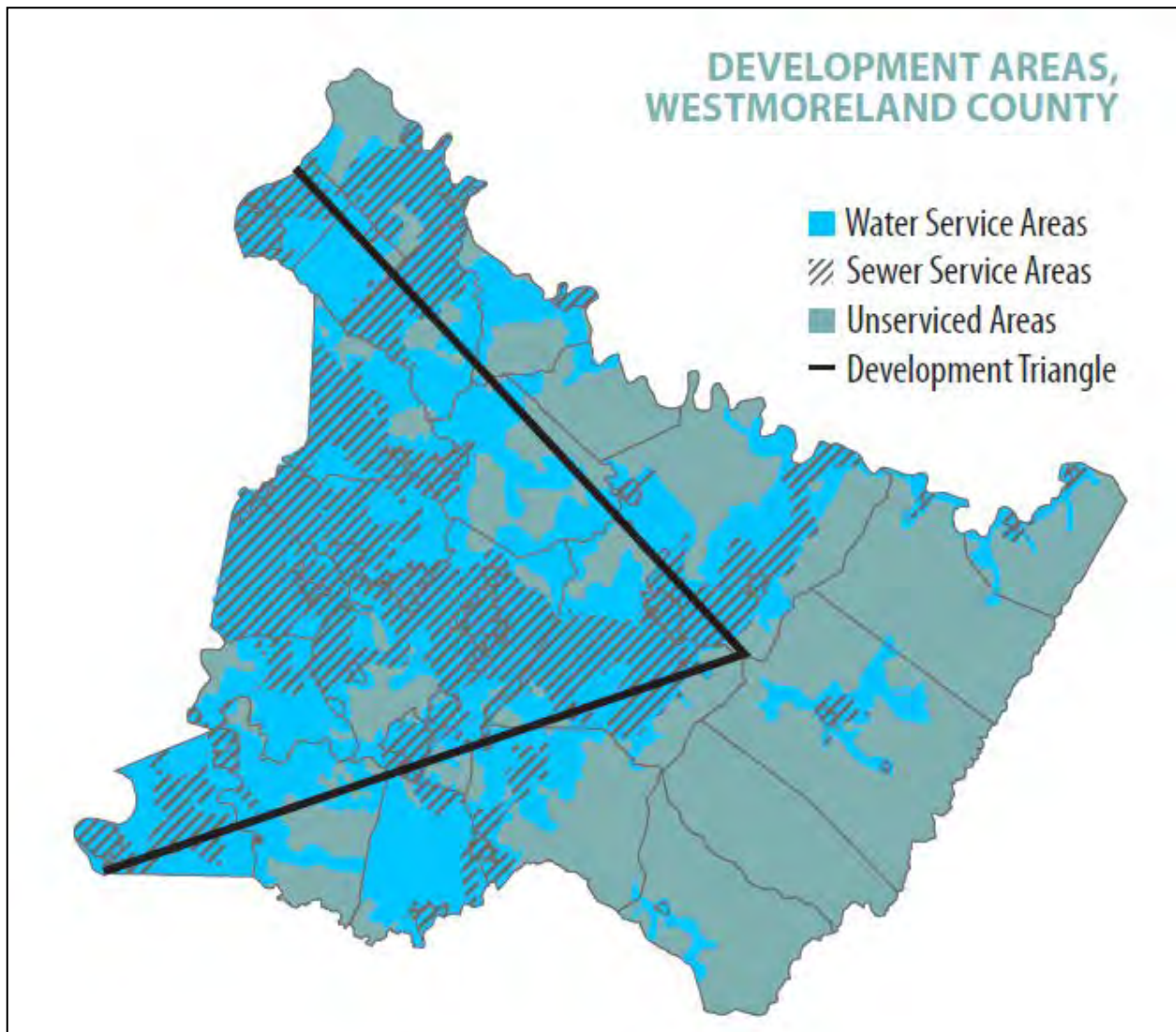
This section provides a general overview of trends in land use change and types of development occurring within Westmoreland County. An understanding of these development trends can assist in planning for further development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure. For comprehensive planning purposes, there are three major forms of development in Westmoreland: urban, suburban, and rural.

Urban areas provide a full range of services and infrastructure (sewer, water and roads) to accommodate new development and redevelopment. In the county, urban areas include the 6 cities, 37 boroughs, and urban portions of townships. They serve as the employment, commercial, service, and cultural centers for their surrounding areas. Most of the open space in these areas is preserved in established parks and recreational areas, and owned and operated by the county or municipality.

The suburban areas, including the urban/suburban development triangle mentioned previously, contain elements of both urban and rural characteristics. Included in the urban/suburban development triangle are 24 municipalities completely within the triangle, and 11 municipalities partially within the triangle. This includes 16 boroughs, 7 cities (including Latrobe, a home rule municipality), and 12 townships (including Murrysville, a home rule municipality). The less dense areas between the boroughs and cities can be described as "suburban areas". Typically, infrastructure (e.g., roads, sewer and water lines) and public services have been extended into suburban areas to accommodate single-family residential subdivisions and highway oriented commercial uses.

The urban/suburban development triangle is the portion of the county where future development is anticipated. The area within the triangle roughly bounded by New Kensington, Latrobe, and Monessen is already largely supported by public infrastructure and existing services and facilities. During the 1980s and 1990s, suburban areas of the county experienced increased development pressure. From all indications, the Westmoreland Department of Planning and Development expects this suburbanization trend to continue for decades to come. It will continue to be fueled by available land, highways, the availability of utility infrastructure, and consumer demand for suburban homes and shopping amenities.

Rural areas are predominant in the eastern part of the county and outside of the urban/suburban development triangle. Rural areas are characterized by a limited range of services and infrastructure available to accommodate new growth and development. Rural areas include farms, farm-related businesses, "patch communities", unincorporated villages, and "crossroads communities".

*Figure 2-5. Development Areas*

Source: Westmoreland County Housing Plan (Draft, 2014)

## 2.5 Population and Demographics

According to U.S. Census figures, Westmoreland County had a population of 365,169 in 2010. DMA 2000 requires that Hazard Mitigation Plans (HMPs) consider socially vulnerable populations. These populations can be more susceptible to hazard events, based on a number of factors including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing. For the purposes of this study, vulnerable populations shall include (1) the elderly (persons aged 65 and over) and (2) those living in low-income households.

Tables 2-3 through 2-5 present a summary and municipal breakdown of the general and socially-vulnerable population statistics for Westmoreland County based on U.S. Census data.



**Table 2-4. Westmoreland County Population and Demographic Statistics Summary (2005-2009 ACS and 2010 US Census)**

Region	2010 Population (2010 US Census)	2010 Population 65 and older (2010 US Census )	2010 Population % below Poverty Level (2008-12 ACS)
Westmoreland County	365,169	68,877	10.1%

Source: 2010 Census, (March 2014)

**Table 2-5. Westmoreland County Population and Demographic Statistics**

Municipality	U.S. Census 2010 Population	U.S. Census 2000 Population	U.S. Census 2010 Population 65 and older	U.S. Census 2000 Population Income < \$25K/year (Households)
Adamsburg Borough	172	221	33	12
Allegheny Township	8,164	8,002	1,385	721
Arnold, City of	5,157	5,667	823	1,149
Arona Borough	370	407	54	39
Avonmore Borough	1,011	820	243	116
Bell Township	2,348	2,458	422	186
Bolivar Borough	465	501	109	51
Cook Township	2,250	2,403	376	133
Delmont Borough	2,686	2,497	408	246
Derry Borough	2,688	2,991	429	362
Derry Township	14,502	14,726	2,879	1,916
Donegal Borough	120	165	25	17
Donegal Township	2,403	2,442	491	271
East Huntingdon Township	7,963	7,781	1,475	1,022
East Vandergrift Borough	674	742	136	81
Export Borough	917	895	157	187
Fairfield Township	2,424	2,536	426	285
Greensburg, City of	14,892	15,899	2,633	2,179
Hempfield Township	43,241	40,721	8,595	3,457
Hunker Borough	291	329	56	24
Hyde Park Borough	500	513	112	81
Irwin Borough	3,973	4,366	647	595
Jeannette, City of	9,654	10,654	1,621	1,656
Latrobe, City of	8,338	8,944	1,614	1,219
Laurel Mountain Borough	167	185	43	17
Ligonier Borough	1,573	1,695	492	174
Ligonier Township	6,603	6,973	1,498	654
Lower Burrell, City of	11,761	12,608	2,655	1,179
Loyalhanna Township	2,382	2,301	326	211
Madison Borough	387	510	87	31
Manor Borough	3,239	2,796	422	131
Monessen, City of	7,720	8,669	1,755	1,423

Municipality	U.S. Census 2010 Population	U.S. Census 2000 Population	U.S. Census 2010 Population 65 and older	U.S. Census 2000 Population Income < \$25K/year (Households)
Mount Pleasant Borough	4,454	4,728	1,047	765
Mount Pleasant Township	10,911	11,153	1,965	1,162
Murrysville, Municipality of	20,079	18,872	3,956	1,015
New Alexandria Borough	560	595	123	78
New Florence Borough	689	784	147	93
New Kensington, City of	13,116	14,701	2,553	2,074
New Stanton Borough	2,173	1,906	305	302
North Belle Vernon Borough	1,971	2,107	346	284
North Huntingdon Township	30,609	29,123	5,640	1,629
North Irwin Borough	846	879	116	104
Oklahoma Borough	809	915	137	80
Penn Borough	475	460	58	26
Penn Township	20,005	19,591	3,078	1,046
Rostraver Township	11,363	11,634	2,103	1,032
St. Clair Township	1,518	1,398	291	204
Salem Township	6,623	6,969	1,567	850
Scottdale Borough	4,384	4,772	839	638
Seward Borough	495	484	108	83
Sewickley Township	5,996	6,230	1,072	634
Smithton Borough	399	444	75	44
South Greensburg Borough	2,117	2,280	480	255
South Huntingdon Township	5,796	6,175	999	609
Southwest Greensburg Borough	2,115	2,398	366	269
Sutersville Borough	605	636	102	78
Trafford Borough	3,113	3,236	648	416
Unity Township	22,607	21,137	4,097	1,529
Upper Burrell Township	2,326	2,240	330	102
Vandergrift Borough	5,205	5,455	889	861
Washington Township	7,422	7,384	1,610	506
West Leechburg Borough	1,294	1,290	288	135
West Newton Borough	2,633	3,083	517	502
Youngstown Borough	326	400	61	26
Youngwood Borough	3,050	4,138	537	355
<b>Westmoreland County Total</b>	<b>365,169</b>	<b>369,993</b>	<b>68,877</b>	<b>37,611</b>

Source: U.S. Census, 2010, 2000

### 2.5.1 Population and Demographic Trends:

This section discusses population trends to use as a basis for estimating future changes that could significantly change the character of the area. Population trends can provide a basis for making decisions on the type of mitigation approaches to consider and the locations in which these approaches should be applied. This information can also be used to support planning decisions regarding future development in vulnerable areas.

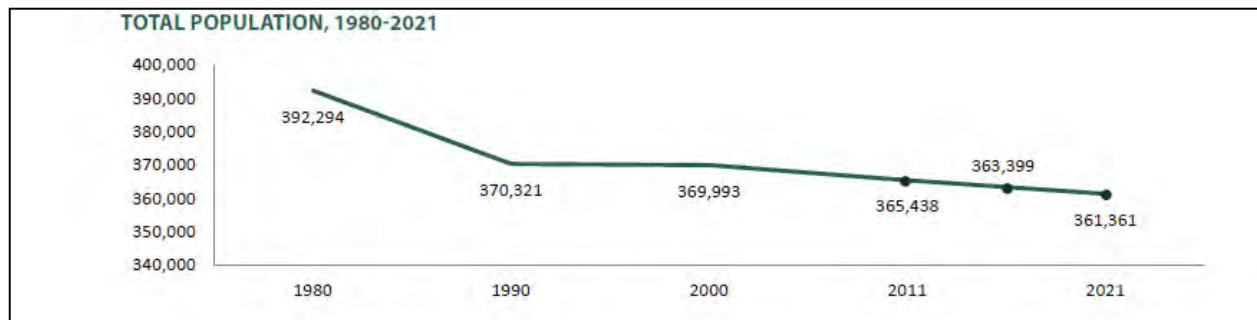
According to 2000 and 2010 U.S. Census figures, Westmoreland County experienced a 1.3 percent decrease in population, from 369,993 in 2000 to 365,169 in 2010. Despite the loss in population, Westmoreland County was the tenth-largest county in the Commonwealth of Pennsylvania (by population) in both 2000 and 2010. The change in population and demographics since 2000 has not been consistent across the County. Municipal population increases in Westmoreland County have ranged from +23% (Avonmore Borough) to -27% (Donegal Borough).

Westmoreland County's population has been declining since 1980, having lost 5.6 percent of its population from 1980 to 1990, 0.9 percent between 1990 and 2000, and 1.3 percent between 2000 and 2010. This decline in population is expected to continue with few indications of significant changes in economic or population trends to suggest otherwise.

The Westmoreland County Housing Plan used a linear projection of population to forecast future population trends. This projection method assumes no change in the average annual decrease in population and extrapolates that decrease into the future. The countywide projections use data from 2000 to 2011 for extrapolation.

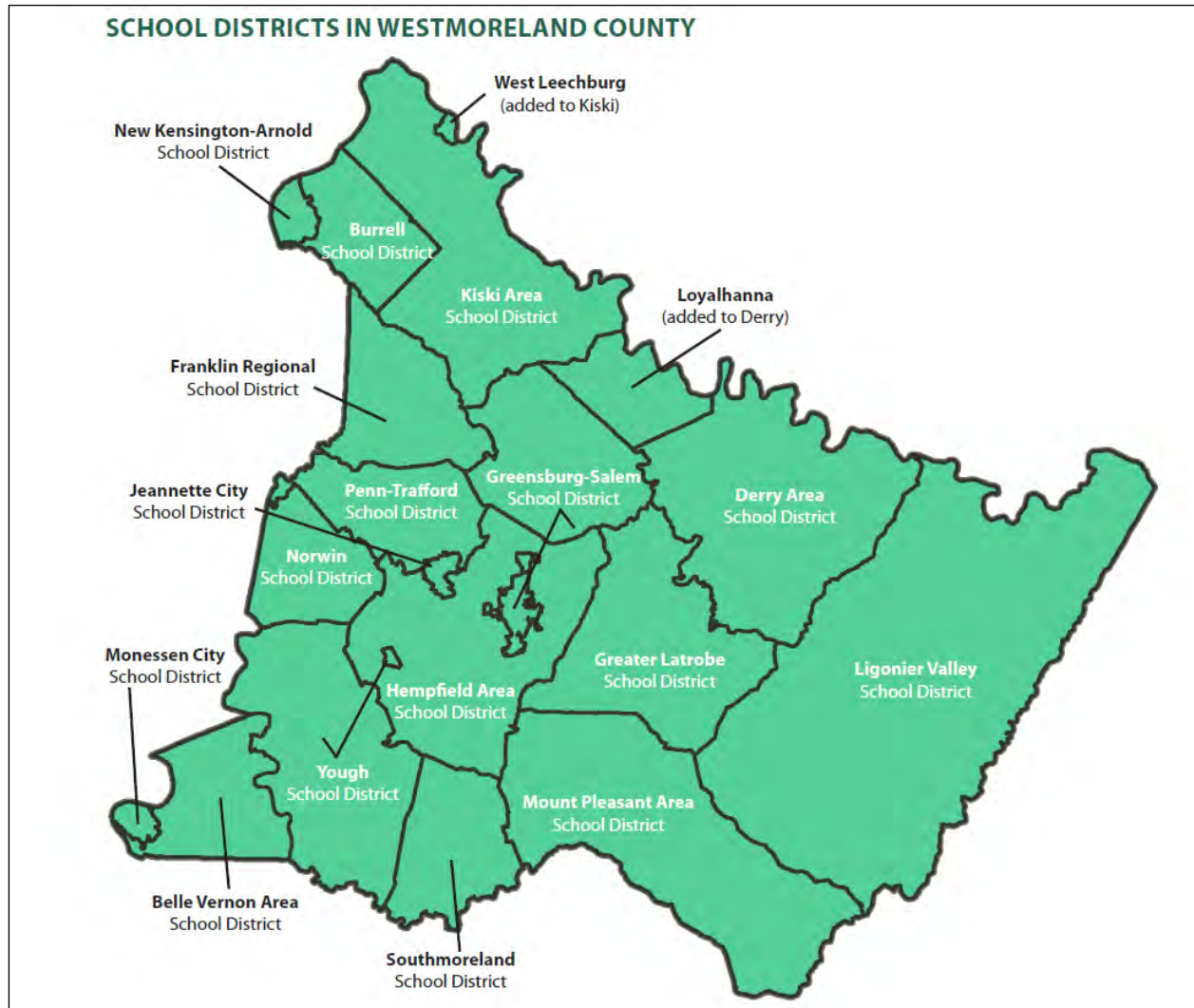
Between 2000 and 2011, Westmoreland County lost 1.2 percent of its total population with an average annualized loss of 0.11 percent. Assuming this trend continues, Westmoreland County's population in 2016 would be 363,339 and 361,361 in 2021.

**Figure 2-6. Population Growth Projections**



Source: Westmoreland County Housing Plan (Draft, 2014)

Within Westmoreland County, a number of areas are projected to grow rapidly in the future while others are projected to continue losing their population. The majority of population growth is expected in the suburban school district bordering Allegheny County. The fastest growing school districts are projected to be Franklin Regional School District and Hempfield School District, which are projected to grow by 2.5% and 1.9%, respectively, by 2016. Other school districts are predicted to lose significant population including Monessen City, New Kensington-Arnold, and Jeannette City School Districts. Figure 2.7 illustrates the Westmoreland County School Districts.

*Figure 2-7. School Districts in Westmoreland County*

Source: Westmoreland County Housing Plan (Draft, 2014)

### 2.5.2 Household Trends

Despite the predicted losses in total population countywide, the number of households in the county is predicted to grow as the average number of persons per household continues to fall. Projections indicate the total number of households will climb from 152,611 in 2011 to 154,830 in 2021. These new households will be smaller on average, with an average household size of 2.28 persons in 2021 compared to 2.34 in 2011.

Within Westmoreland County, the communities with the fastest household growth are also the ones with the fastest population growth: school districts bordering Allegheny County such as Franklin Regional and Penn-Trafford. Many school districts that are losing population, however, are seeing an increase in the number of households. These school districts include Mount Pleasant, Derry Area and Kiski School Districts.

## 2.6 Economic Profile

The economy in Westmoreland County is generally strong, with unemployment consistently below statewide and national averages. Consistent with the national trend, the County has been transitioning from a predominantly manufacturing based economy to one focused on education and health care.

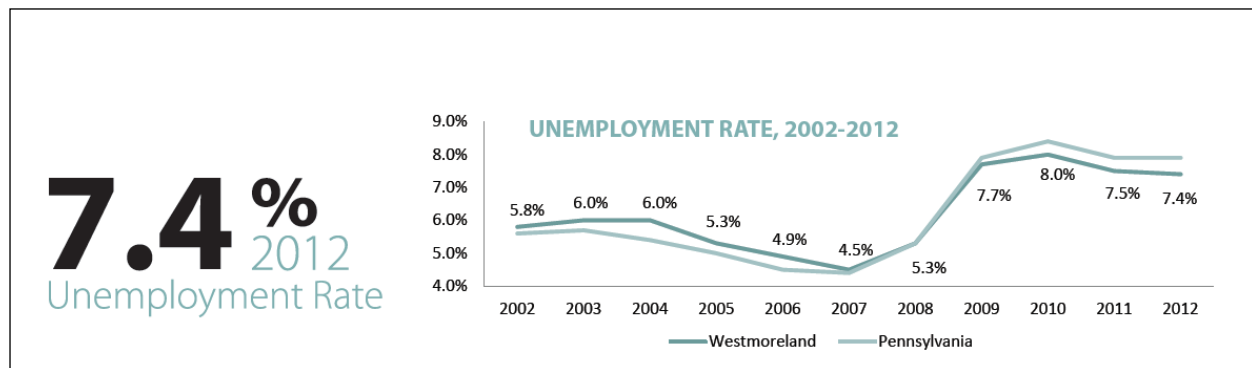
Outside of the former industrial cities and older economic hubs, many of Westmoreland residents commute to neighboring Allegheny County for work. The County's highest median incomes are in townships directly bordering Allegheny County along the US 22 corridor. According to the Census Bureau's Local Employment Dynamics database, Greensburg has the highest concentration of jobs within the county. Other employment centers include Latrobe and areas along major east-west highways leading into Allegheny County. In general, jobs are concentrated in the more urbanized western portion of the county.

### 2.6.1 Unemployment

According to the Bureau of Labor Statistics, the unemployment rate for Westmoreland County in 2012, averaged over the 12-month period, was 7.4 percent. This was down from a high of 8.0 percent in 2010 but almost 3 points higher than the County's 2007 unemployment rate of 4.5 percent.

The county's 2012 rate was significantly lower than both the statewide and national averages of 7.9 percent and 8.1 percent. Since 2007, Westmoreland County's unemployment rate has consistently remained below both the statewide and national average despite remaining higher than rates prior to the recession.

*Figure 2-8. Unemployment Rate for Westmoreland County and Pennsylvania, 2002 – 2012*



Source: Westmoreland County Housing Plan (Draft, 2014)

Municipal unemployment rates vary, with older communities exhibiting significantly higher rates while the largest townships on the eastern and western borders of the county have the lowest rates.

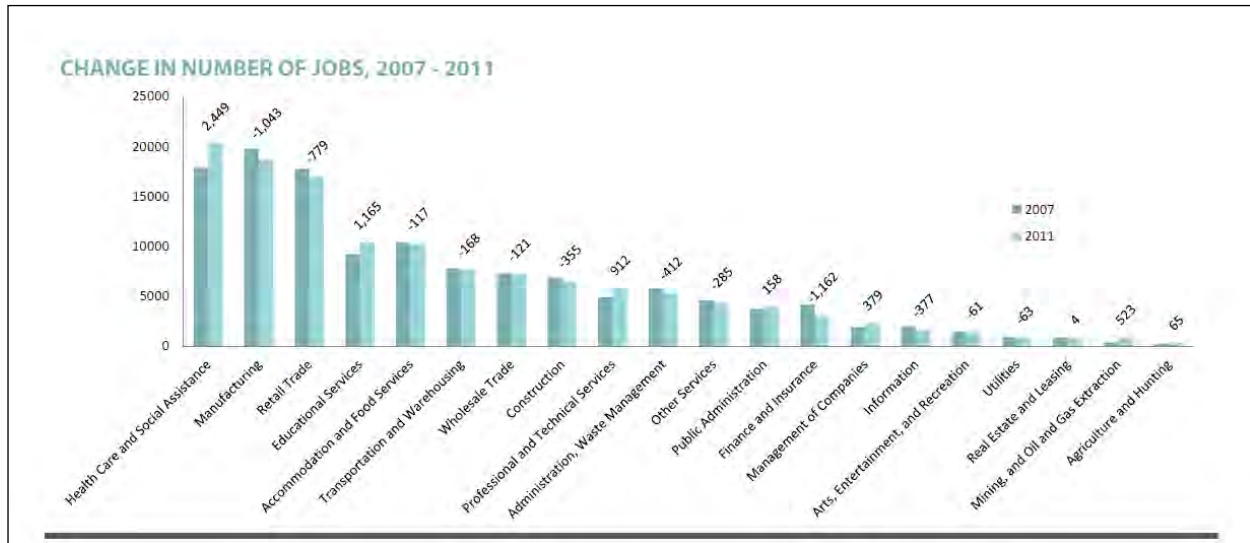
### 2.6.2 Employment by Industry

According to the Census Bureau's Local Employment Dynamics database, there were 128,467 jobs in Westmoreland County in 2011. The largest employment sector was health care and social assistance (i.e., youth and family services, rehabilitation services, and child day-care services), a category that accounted for just over 20,000 jobs or 15.8 percent of the total job market.

Manufacturing was the next largest employment sector with 14.6 percent of total jobs, followed by retail with 13.2 percent of total jobs. Agriculture employed the fewest people with only 0.2 percent of total jobs, followed by mining and oil and gas extraction which account for 0.7 percent.

Since 2007, the health care and social assistance sector gained the most jobs followed by the education sector. Conversely, the manufacturing sector and finance and insurance sector lost the most jobs in this time period. Figure 2-9 depicts the change in number of jobs per industry from 2007 through 2011.

**Figure 2-9. Change in Number of Jobs, 2007 - 2011**



Source: Westmoreland County Housing Plan (Draft, 2014)

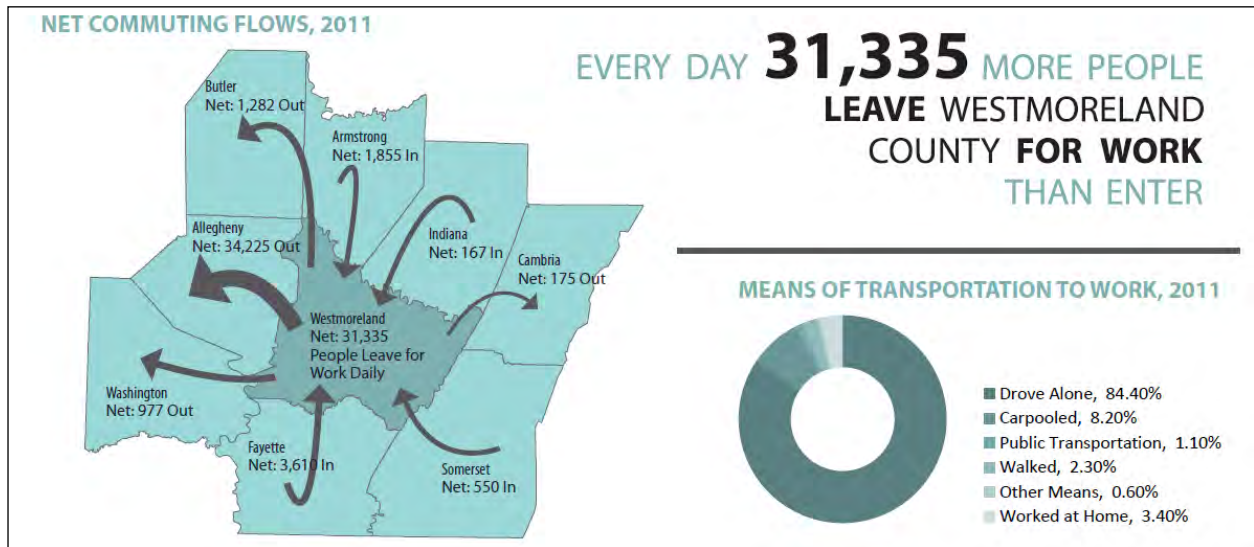
### 2.6.3 Workforce Composition

Similar to the number of jobs in Westmoreland County, the majority of workers were employed in the health care and education services (24 percent), and manufacturing (14.1 percent). About 12.9 percent worked in the retail and trade business.

There are more employees living in Westmoreland County than there are jobs in almost all categories, with the exception of the wholesale trade industry. This is consistent with Westmoreland's large commuting population. Figure 2-10 depicts the net commuting flows from and to Westmoreland County.



Figure 2-10. Net Commuting Flows, 2011



Source: Westmoreland County Housing Plan (Draft, 2014)



## SECTION 3: PLANNING PROCESS

### 3.1 Introduction

This section includes a description of the planning process used to update the 2009 plan, including how it was prepared, who was involved in the process, how the public and stakeholders were involved, and how this plan coordinates and integrates with other related risk management mechanisms in Westmoreland County.

To ensure that the plan update met the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), as well as the interests and needs within Westmoreland County, the plan update process and plan documentation was developed to achieve the following goals:

- Westmoreland County, and 49 of the municipalities in the County, have elected to actively participate in the planning process, as identified in Table 3-1.

*Table 3-1. Jurisdictions Participating in the 2014 Update*

Participating Jurisdictions			
<b>WESTMORELAND COUNTY</b>			
Allegheny Township	Hunker	Murrysville	Sewickley Township
Avonmore	Irwin	New Alexandria	Smithton
Cook Township	Latrobe	New Kensington	South Greensburg
Delmont	Laurel Mountain	New Stanton	South Huntingdon
Derry Borough	Ligonier Borough	North Belle Vernon	Southwest Greensburg
Derry Township	Ligonier Township	North Huntingdon Township	St. Clair Township
Donegal Borough	Loyalhanna Township	North Irwin	Unity Township
Donegal Township	Madison	Oklahoma	Upper Burrell
East Huntingdon	Manor	Penn Township	Washington Township
East Vandergrift	Monessen	Rostraver Township	West Leechburg
Fairfield Township	Mount Pleasant Borough	Salem Township	West Newton
Greensburg	Mount Pleasant Twp.	Scottdale	Youngwood
Hempfield Township			

- In addition to considering all natural hazards facing the Westmorland, thereby satisfying the natural hazards mitigation planning requirements specified in DMA 2000, the plan update process has considered non-natural hazards believed to pose significant risk to Westmoreland County, and expand further upon the natural hazards in the 2009 plan.
- The plan update has been developed following the process outlined by DMA 2000, FEMA regulations, and FEMA and PEMA guidance. Following this process has ensured that all the requirements are met, and supports plan review.

The plan update was written using the best available information obtained from a wide variety of sources. Throughout plan development, a concerted effort was made to gather information from participating county and municipal agencies and staff as well as stakeholders, federal and state agencies, and the residents within Westmoreland County. The Hazard Mitigation Working Group solicited information from local agencies and individuals with specific knowledge of certain natural and non-natural hazards and past historical events, as well as considering planning and zoning codes, ordinances, and other recent planning decisions. The hazard mitigation strategies identified in this plan update have been developed through an extensive planning process involving county and local agencies, municipal officials and staff, and planning area residents.

This section of the plan update describes the mitigation planning process, including (1) Organization of Planning Process; (2) Plan Update Activity; (3) Stakeholder Outreach and Involvement; (4) Public Outreach and Participation; and (5) Integration/Coordination with Existing Plans and Programs.

## 3.2 Organization of Planning Process

The following section describes how the many parties involved in this plan update process were organized, and describes their involvement and input to the plan update.

The 2009 plan was prepared by the Westmoreland County Department of Public Safety in coordination with the Westmoreland County Department of Planning and Development, the Westmoreland County Commissioners, the Westmoreland County Department of Public Works, the Westmoreland County Conservation District, and the Municipal Authority of Westmoreland County with participation of jurisdictions in Westmoreland County. Implementation of the 2009 plan was supported by these agencies.

The Westmoreland Department of Public Safety served as the management agency to implement and manage the overall plan update process. In 2013, Westmoreland County was awarded a FEMA legislative Pre-Disaster Mitigation (PDM) planning grant as part of the 2012-2013 Hazard Mitigation Assistance (HMA) program grant cycle.

Through an open bid process, Westmoreland County selected a contract planning consultant (Tetra Tech, Inc.) to support the plan update process. Specifically, the planning consultant was tasked with:

- Assisting with the organization of a steering committee and municipal planning partnership
- Assisting with the development and implementation of a public and stakeholder outreach program
- Data collection, and review and incorporation of existing plans and documents
- Facilitation of meetings (municipal planning partnership, Hazard Mitigation Working Group, stakeholder, public and other)
- Reviewing and updating the hazards of concern
- Updating the profiling and risk assessment for the hazards of concern, including expanded consideration of non-natural hazards
- Assistance with the update of mitigation planning goals and objectives
- Review and evaluation of progress on the county and local mitigation strategies identified in the 2009 plan
- Assistance with the screening of mitigation actions and the identification of appropriate actions
- Assistance with the prioritization of mitigation actions
- Authoring of the draft and final plan documents

To facilitate the plan update process, the Westmoreland Department of Public Safety, with support from the contract planning consultant, established a Hazard Mitigation Working Group to provide guidance and direction to the plan update effort and to ensure the resulting document will be embraced both politically and by the constituency within Westmoreland County. The Hazard Mitigation Working Group provided guidance and leadership, oversight of the planning process, and acted as the point of contact for all municipal planning partners and the various stakeholder and interest groups in Westmoreland County. Specifically, the Hazard Mitigation Working Group was charged with the following responsibilities:

- Review the original plan and identify what is needed and desired in the plan update;
- Establish a timeline for the plan update process;
- Ensure that the plan update meets the requirements of prevailing Federal regulations and Federal and State guidance;
- Solicit and document the participation of all municipalities in the plan update process;
- Organize and oversee the public and stakeholder involvement process;
- Provide input to update the hazards of concern identified in the 2006 plan;
- Assist in gathering information for inclusion in the plan update, including the use of previously developed reports and data;
- Review and approve the data and information used within the plan update;
- Assist with review of the mitigation planning goals and objectives;
- Review and update the County-level mitigation strategy;
- Review and approve sections of the plan update;
- Adopt and maintain the plan update.

Table 3-2 shows the membership of the Hazard Mitigation Working Group at the time of this plan update's publication.

***Table 3-2 Westmoreland County Hazard Mitigation Plan Update Working Group Membership***

Name	Title	Department / Agency
Jack Ashton	Assistant Manager	Municipal Authority of Westmoreland County
Chris Bova	Deputy Director	Westmoreland County Planning Department
Darlene Bracken	EM Specialist	Pennsylvania Emergency Management Agency
Ron Cramer	LEMC	New Alexandria
Jeff Downs	Representative	West Penn Power
Brian Jones	Deputy Director	Westmoreland County Department of Public Safety
Ellen Keefe	Member	Westmoreland County Cleanways
Dave Knox	LEMC	Upper Burrell
Ted Kopas	County Commissioner	Westmoreland County
Richard Matason	Member	North Huntingdon Township
Jim Pillsbury	Member	Westmoreland Conservation District
Anthony Pologruto	Coordinator	Westmoreland County Department of GIS
Sandy Smythe	Finance	Westmoreland County Department of Public Safety
Daniel Stevens	Public Information Officer	Westmoreland County Department of Public Safety
Christopher Tantlinger	Hazard Mitigation Officer	Westmoreland County Department of Public Safety

One of the first actions of the Hazard Mitigation Working Group was to invite all municipalities in Westmoreland County to participate in the plan update process, and to formalize and document their

intent to participate. On October 11, 2013, all municipalities within Westmoreland County were notified of the pending planning process and invited to formally participate. Municipalities were asked to formally notify the Westmoreland Department of Public Safety of their intent to participate via a Letter of Intent, a sample of which is included in Appendix D, and to identify a primary and secondary planning point of contact to serve as their municipal representatives throughout the planning process.

Each municipality received a copy of the “Letter of Intent to Participate” which outlined the responsibilities of all plan participants. All participating jurisdictions were charged with the following responsibilities:

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Stakeholder Committee meetings (~ 4 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

It is noted that the municipal Letter of Intent to Participate in the 2014 plan update includes language authorizing the Hazard Mitigation Working Group to “guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan document” on their behalf. As

such, this planning effort was organized generally according to the “Combination Model” identified in FEMA 386-8.

The Letter of Intent to Participate identifies the municipal planning partner expectations as those activities comprising overall participation by jurisdictions throughout the planning process. It is not meant, however, to serve as an explicit determinant of jurisdictional participation. It is recognized that the jurisdictions in Westmoreland County have differing levels of capabilities and resources available to apply to the planning process, and further have differing exposure and vulnerability to the natural and non-natural hazard risks being considered in this plan update. It was the Hazard Mitigation Working Group’s intent to encourage participation by all inclusive jurisdictions, and to accommodate their specific needs and limitations while still meeting the intents and purposes of plan participation, the regulations and prevailing guidance. Such accommodations have included the establishment of a Hazard Mitigation Working Group and engaging a contract consultant to assume certain elements of the planning process on behalf of the jurisdictions, providing multiple sessions of municipal meetings, and providing additional and alternative mechanisms to meet the intent of participating in the planning process.

Ultimately, jurisdictional participation is evidenced by jurisdiction specific information referred throughout this plan update wherein the jurisdiction has identified their planning POCs, evaluated their risk to the hazards of concern, identified their capabilities to effect mitigation in their community, and identified and prioritized an appropriate suite of mitigation initiatives, actions, and projects to mitigate their hazard risk; and eventually by the adoption of the plan update via resolution.

As all municipalities were encouraged to promote broad participation from the various departments and representatives within their community, we herein refer to the municipalities along with their planning POCs and others within their community that participated in the overall process as the “municipal planning partnership”, and the universe of county and local participants as the “planning partnership”.

Information and input provided by these participating municipalities has been included throughout this plan update where appropriate, as identified in the references.

### 3.3 Plan Update Activity

During the course of the plan update, the Hazard Mitigation Working Group and municipal planning partnership worked together through a variety of methods and venues to address the various elements of the plan update process, as summarized in Table 3-3, and further documented in the meeting agendas and minutes in Appendix C.

Municipalities, through their POCs and other municipal representatives, stakeholders and residents, actively participated through a program of meetings, forums, workshops, and other data and information collection and input mechanisms. Municipal level planning activities included a series of project meetings offered at multiple times and locations to accommodate the varying schedules of plan participants, augmented with direct local assistance through onsite meetings and phone and email support. Through these activities, municipalities were able to gather and share information, identify specific hazard areas and vulnerabilities, develop and update their local assets including critical facilities, identify their local capabilities to mitigate hazard risk, identify progress on their 2009 local mitigation strategies, and update their local strategies with new projects and initiatives addressing their local risks and vulnerabilities.

Table 3-3 presents a summary of project activities implemented, and milestones met, during the planning process for this update. Meeting agendas from 2008 – 2014 for the Hazard Mitigation Working Group Meetings can be found in Appendix D.

*Table 3-3. Summary of Project Activity and Milestones*

Date	Description of Activity	Participants
November 14, 2013	Working Group Meeting – Reviewed the progress on plan development and discussed improvements, suggestions, and revisions	Jack Ashton – MAWC; Chris Bova – Westmoreland County Planning; Michael Brooker – WCDPS; Dave Knox – Upper Burrell; Jim Laffey – Tetra Tech; Anthony Pologruto – WCDPS GIS; Sandy Smythe – WCDPS; Christopher Tantlinger - WCDPS
September 11, 2013	Working Group Meeting – Reviewed the progress on plan development and discussed improvements, suggestions, and revisions	Jack Ashton – MAWC; Chris Bova – Westmoreland County Planning; Michael Brooker – WCDPS; Dave Knox – Upper Burrell; Anthony Pologruto – WCDPS GIS; Sandy Smythe – WCDPS; Christopher Tantlinger - WCDPS
October 9, 2013	Working Group Meeting – Reviewed the Letter of Intent – municipal distribution letter and future schedule of HMP planning update.	Darlene Bracken – PEMA; Chris Bova – Westmoreland County Planning; Michael Brooker – WCDPS; Anthony Pologruto – WCDPS GIS; Dan Stevens – Westmoreland County; Christopher Tantlinger - WCDPS
November 12, 2013 – Session 1	Stakeholder Kickoff Meeting – Provided an overview of the plan components and planning process	Clentin Martin – South Greensburg; Bruce Light – Penn Twp.; Debbie Rhodes – Cook Twp.; Pete Tenerowicz, John Myland, and Merle Musich – Unity Twp.; Robert Gerlach – Hempfield Twp.; Kristina Clark – St. Clair Twp.; Anthony Pocogrino – Westmoreland County; John Shepherd – North Huntingdon; Paul Fry – Ligonier Borough; Kirk Nolan – Delmont Borough; Earl Springen – Hunker; Angelo Pallone – Scottdale; Bruce Beitel – Hempfield; Chris Boug – Westmoreland County; John Storey – Youngwood; Lucien Bove – West Leechburg and North Irwin; Dan Stevens – Westmoreland County; Ted Kopas – Westmoreland County; Darlene Bracken – PEMA; Christopher Tantlinger – Westmoreland County; Barb Zunder – Salem Twp.; Les Harvey – Greensburg; Jim Pillsbury – Westmoreland Conservation District; Ken Walters – Loyalhanna Twp.; Duane Hutter – Mt. Pleasant; Lori Lindt – Derry Borough
November 12, 2013 – Session 2	Stakeholder Kickoff Meeting – Provided an overview of the plan components and planning process.	Christopher Tantlinger – Westmoreland County; Dottie Bacher, Ron Cramer, and Molly McNoughton – New Alexandria; Ronald Olschon – Rostraver Twp.; Anthony Buyny – East Vandergrift; Jeremy Dixon and Dann Lynn – Manor Borough; John Garber – North Belle Vernon; Paul Rupnik – Sewickley Twp.; Brian Jones – Westmoreland County; Michael Brooker – Westmoreland County; Ronald Norton – Oklahoma Borough; James King – East Huntingdon Twp. Mark Shire – Monessen City
December 11, 2013	Working Group Meeting – Reviewed progress of the HMP update and next steps.	Chris Bova – Westmoreland County Planning; Ron Cramer – New Alexandria; Anthony Pologruto – WCDPS GIS; Dan Stevens – Westmoreland County; Christopher Tantlinger - WCDPS
January 8, 2014	Working Group Meeting – Reviewed progress of the HMP update and next steps.	Chris Bova – Westmoreland County Planning; Dave Knox – Upper Burrell; Anthony Pologruto – WCDPS GIS; Christopher Tantlinger -



Date	Description of Activity	Participants
		WCDPS
February 12, 2014	Risk Assessment Hazard Mitigation Working Group Meeting – Reviewed Flood profile, hazard rankings and risk assessment general outline.	Chris Bova – Westmoreland County Planning; Ron Cramer – New Alexandria; Dave Knox – Upper Burrell; Anthony Pologruto – WCDPS GIS; Christopher Tantlinger - WCDPS
February 21, 2014	Risk Assessment Hazard Mitigation Working Group Meeting – Reviewed remaining profiles in extensive detail.	Jack Ashton – MAWC; Ron Cramer – New Alexandria; Dave Knox – Upper Burrell; Jim Pillsbury – NRCS; Anthony Pologruto – WCDPS GIS; Sandy Smythe – WCDPS; Christopher Tantlinger - WCDPS
February 26, 2014	Risk Assessment Workshop – Reviewed the overall planning process and focused on the development of the risk assessment, including an overview of profiled hazards and hazard rankings.	Bruce Light – Penn Twp.; Dan Stevens – Westmoreland County; Chris Bova – Westmoreland County; Christopher Tantlinger – Westmoreland County; Brit Grimes, Trudy Harkoom, Linda Sisson – Donegal; Clyde Snyder – Tetra Tech; John Storey – Youngwood; Lucien Bove – West Leechburg, Vandergrift, North Irwin, Irwin, New Stanton, Avonmore, Hyde Park, Hunker; Jonathan Talac; Melvin Steele – New Stanton; Eddie Troup and Richard Gates – South Huntingdon Twp.
March 12, 2014	Working Group Meeting – Reviewed progress of the HMP update and next steps.	Jack Ashton – MAWC; Dave Knox – Upper Burrell; Anthony Pologruto – WCDPS GIS; Dan Stevens – Westmoreland County; Christopher Tantlinger - WCDPS
April 15, 2014	Hazard Mitigation Strategy Working Group Meeting – Reviewed progress of the HMP update. Review the capability assessment and mitigation strategy sections of the HMP in detail.	Darlene Bracken – PEMA; Chris Bova – Westmoreland County Planning; Ron Cramer – New Alexandria; Dave Knox – Upper Burrell; Anthony Pologruto – WCDPS GIS; Dan Stevens – Westmoreland County; Sandy Smythe – WCDPS; Christopher Tantlinger - WCDPS
April 30, 2014	Mitigation Strategy Workshop – Reviewed the overall planning process and focused on the development of the mitigation strategy.	Darlene Bracken – PEMA; Anthony Pologruto – WCDPS GIS; Dan Stevens – Westmoreland County; Christopher Tantlinger - WCDPS
May 21, 2014	Working Group Meeting – Reviewed progress of the HMP update and next steps.	Dave Knox – Upper Burrell; Anthony Pologruto – WCDPS GIS; Sandy Smythe – WCDPS; Christopher Tantlinger - WCDPS
June 10, 2014	Working Group Meeting – Reviewed the draft plan.	Anthony Pologruto – WCDPS GIS; Christopher Tantlinger – WCDPS; Chris Bova – Westmoreland County Planning; Dan Stevens – Westmoreland County; Jim Laffey – Tetra Tech; Caitlin Kelly - WCDPS
July 9, 2014	Working Group Meeting – Continued to review the draft plan with a focus on the Risk Assessment.	Chris Bova – Westmoreland County Planning; Darlene Bracken – PEMA; Sandy Smythe – WCDPS; Clyde Snyder – Tetra Tech; Jim Laffey – Tetra Tech; Roland Mertz – WCDPS; Daniel Stevens – WCDPS; Christopher Tantlinger – WCDPS;
November 13, 2014	Working Group Meeting – General discussion on the status of the final plan and information regarding updated mapping and training.	Chris Bova – Westmoreland County Planning; Clyde Snyder – Tetra Tech; Christopher Tantlinger – WCDPS; Dave Knox – Upper Burrell; Jim Laffey – Tetra Tech

GIS = Geographic Information Systems  
MAWC = Municipal Authority of Westmoreland County  
PEMA = Pennsylvania Emergency Management Agency  
WCDPS = Westmoreland County Department of Public Safety



### 3.4 Stakeholder Outreach and Involvement

Diligent efforts were made to assure broad regional, county and local representation in this planning process. To that end, a comprehensive list of stakeholders was developed with the support of the Hazard Mitigation Working Group. Stakeholder outreach was performed early on, and continually throughout the planning process, and included the following methods of outreach and involvement:

- Critical county and regional stakeholders served on the Hazard Mitigation Working Group (see membership earlier in this section).
- At the bi-monthly local Emergency Management Coordinators (EMC) update the local EMC were encouraged to have each municipality create a hazard mitigation officer.
- Key State and Federal stakeholders (including PEMA and FEMA Region III) met directly with the Hazard Mitigation Working Group and attended certain planning meetings throughout the plan update process.
- Members of the Hazard Mitigation Working Group and municipal planning partnership serve on and/or participate with various regional, county and local stakeholder groups (e.g. Community Emergency Response Teams (CERTs), Local Emergency Planning Committees (LEPCs); Schools, Fire and Police Departments, Emergency Medical Services, utility authorities, and hazardous material response teams).
- The project was presented at numerous regularly scheduled stakeholder group meetings throughout Westmoreland County, wherein stakeholders were encouraged to provide input to the process and plan update relevant to their mission and purview.
- In November 2013, a large and diverse group of stakeholders were invited to participate in a hazard mitigation workshop. The reason for this meeting was to explain the purpose and benefits of mitigation planning, and to help identify potential mitigation strategies (initiatives, programs, projects) to be included in the plan update. The meeting was an open forum, facilitated by the contract consultant for this project, in the format of a Strengths, Weaknesses, Obstacles and Opportunities (SWOO) exercise. This interactive exercise was designed to screen a broad range of potential mitigation initiatives to address those hazards that pose the greatest risk in Westmoreland County, in order to identify specific mitigation initiatives at the regional, county and local level for inclusion in the plan update.

The following is a list of the various stakeholders that were invited to participate in the development of this plan update, along with a summary of how these stakeholders participated and contributed to the plan. It should be noted that this summary listing cannot possibly represent the universe of stakeholders that were aware of and/or contributed to this plan update. Outreach efforts were being made, both formally and informally, throughout the process by the many planning partners involved in the effort, and documentation of all such efforts is impossible. Rather, this summary is intended to demonstrate the scope and breadth of the stakeholder outreach efforts made during the development of this plan update.

Information and input provided by these stakeholders has been included throughout this plan update where appropriate, as identified in the references.

#### 3.4.1 Federal, State and Regional Agencies

**Federal Emergency Management Agency (FEMA) Region III:** Provided planning grant funding; provided programmatic guidance and support; attended and facilitated certain project meetings; provided

National Flood Insurance Program (NFIP) data for Westmoreland County; provided input on risk ranking (risk factor) process; reviewed plan update documents.

**Pennsylvania Emergency Management Agency (PEMA):** Attended project meetings; provided grant administration support and guidance; provided recent FEMA planning guidance; provided programmatic, technical and administrative assistance.

**Pennsylvania Department of Environmental Protection (PADEP):** Invited to participate on the Hazard Mitigation Working Group.

**United States Army Corps of Engineers:** Provided data and information on dams and levees in Westmoreland County.

### 3.4.2 Westmoreland County Government Agencies

**Westmoreland County Department of Public Safety (WCDPS):** Mitigation project management; provided grant and contract application and administrative support; provided direct representation on the Working Group; provided data and information on assets and vulnerabilities throughout the County; supported public and stakeholder outreach including hosting the public HMP website; identified completed and ongoing mitigation activities and updates to the county and local mitigation strategies; reviewed and provided comment on draft plan sections; and facilitated regional mitigation planning coordination.

**Westmoreland County Planning Department (WCPD):** Provided representation on the Working Group; provided regional data and information, plans and studies; supported public and stakeholder outreach, assisted with the identification of county and local vulnerabilities; reviewed and provided comments on draft plan sections.

**Westmoreland County Department of Public Safety - Geographic Information Systems (GIS) Department:** Provided critical GIS data for Westmoreland County. This data was integral in conducting vulnerability assessment and updating critical facility information for use in the plan update.

**Westmoreland Conservation District:** A representative for the WCD served on the project Hazard Mitigation Working Group. As an active member, this representative was directly involved in group discussions, plan review, and update input.

### 3.4.3 Utilities

**Municipal Authority of Westmoreland County:** A representative for the MAWC served on the project Hazard Mitigation Working Group. As an active member, this representative was directly involved in group discussions, plan review, and update input. The MAWC also provided the County's Water Shortage Response Plan and 5-Year Capital Plan.

**West Penn Power:** A representative for the West Penn Power served on the project Hazard Mitigation Working Group. As an active member, this representative was directly involved in group discussions, plan review, and update input.

### 3.5 Public Outreach and Participation

In order to facilitate coordination and communication with the Working Group, planning partnership and citizens, numerous methods of public outreach were conducted to inform the public of the plan update and encourage participation in the planning process. The following public outreach efforts were made during the development and review of this plan update:

- The Westmoreland Department of Public Safety developed a public Hazard Mitigation Planning webpage ([www.westmorelandhmp.com](http://www.westmorelandhmp.com)) to explain the project and elicit public participation in the process and input into the plan update. The webpage was launched in November 2013. See Appendix E for further views of the webpages and content.

An on-line hazards preparedness citizen survey was developed to gauge household preparedness that may impact Westmoreland County and to assess the level of knowledge of tools and techniques to assist in reducing risk and loss from those hazards (<http://www.surveymonkey.com/s/WestmorelandHMP>). The questionnaire asked 23 quantifiable questions about citizen perception of risk, knowledge of mitigation, and support of community programs. The questionnaire also asked several demographic questions to help analyze trends.

The questionnaire has been available on the public website since November 2013.

- Public meetings were held throughout the planning process to present various results of the planning initiative, and to encourage public input to the planning process.
- Information regarding the 2014 HMP and the planning update process was posted on the Westmoreland County Public Information webpage and on various other departmental websites within the County.
- Social media (e.g. Facebook, Twitter, etc.) was utilized to inform and encourage public participation in the 2014 HMP update.
- Print and digital media was contacted and provided information regarding all public and stakeholder meetings.
- Draft and final versions of the plan update have been posted to the public website ([www.westmorelandhmp.com](http://www.westmorelandhmp.com)) for public review and comment, as they became available.
- The complete draft plan was posted to the public website in July 2014 and advertised via legal notice, on the County Department of Public Safety website, and through press releases to local media.
- Westmoreland County and all municipalities have identified continued public outreach as a high priority mitigation initiative within their jurisdictional annexes (see Section 9).

### 3.6 Integration/Coordination with Existing Plans and Programs

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. In Westmoreland County there are many existing plans and programs that support hazard risk management, and thus it is critical that this hazard mitigation plan integrate and coordinate with, and complement, those mechanisms.

Section 5 “Capability Assessment” provides a summary and description of the existing plans, programs and regulatory mechanisms in Westmoreland County that support hazard mitigation. This section documents how these existing plans and programs have been integrated into this updated plan, and how this plan will continue to promote and effect that coordination.

The integration of existing data, plans and programs is further documented in the comprehensive “References” section of this plan update, as well as in the “Data and Methodology” sections of the hazard profiles (Section 4).

### 3.6.1 Emergency Management Plans and Programs

The Westmoreland County HMP update project has been managed through the Department of Public Safety, allowing broad integration of relevant emergency management data, information and programs to this update. Further, county and municipal participation in this process has included emergency managers, police, fire and other first responders, and input from members of LEPCs.

Data and information used included disaster claims data (including public and individual assistance) and other loss information to support the updated vulnerability assessments and assist with the identification of appropriate, cost-effective mitigation projects. Specifics about response and recovery programs and efforts in Westmoreland County, including the management and administration of mitigation and emergency preparedness grant programs, have led to specific county and local-level mitigation actions to improve regional emergency management coordination and build related risk management capabilities.

Westmoreland County and participating municipalities recognize that the findings and recommendations of this plan update need to be incorporated into their emergency planning, preparedness, response and recovery programs and operations. Public education and outreach to improve personal preparedness, and promote an awareness of mitigation opportunities and personal protection through risk insurance, have been incorporated in specific county and local initiatives.

### 3.6.2 Comprehensive Planning and Land Use Regulation

Available comprehensive plans, relevant land use documents, and regulations were reviewed during this plan update process, including:

- Comprehensive Plan, Westmoreland County, January 2005
- Subdivision and Land Development Ordinance of the County of Westmoreland
- Sewickley Creek Watershed Conservation Plan
- Tubmill Creek Watershed Protection and Restoration Project
- The Natural Heritage Inventory
- Kiski Conemaugh Basin Greenway Feasibility Study
- Turtle Creek Watershed Act 167 Stormwater Management Plan
- Macroinvertebrate Study
- Loyalhanna Watershed Assessment and Restoration Plan

Information from these plans was incorporated into the county profile (Section 2), hazard profiles (Section 4), and into the asset inventory (population/demographics, general building stock, critical facilities) used to develop the updated vulnerability assessments (Section 4).

Recommendations within these plans have been considered in developing and updating the county and municipal-level mitigation strategies.

It was the intention that through this planning process, municipalities shall incorporate the findings and recommendations of this plan update into future local planning efforts, and into the overall execution of their land-use planning process (e.g. site plan review, permitting, code enforcement). Known or anticipated future development in Westmoreland County was identified at the local level, including the identification of known hazard risks and risk zones in Section 4.0 of this plan.

### 3.6.3 Act 167 Stormwater Management Plan

The County provided Act 167 Stormwater Management Plans for the entire County. Information that was incorporated into this plan update includes general watershed information, identification of floodprone areas and known restrictions, and potential mitigation projects.

### 3.6.4 National Flood Insurance Program (NFIP) and the Community Rating System (CRS)

Currently, all municipalities in Westmoreland County participate in the NFIP, with no municipalities having outstanding sanctions or suspensions.

At the time this plan update was written, Westmoreland County preliminary DFIRMs dated 2011 were used to evaluate exposure and determine potential future losses.

FEMA Region III provided NFIP policy, claims and repetitive loss data for the entire County. This data was incorporated in the flood hazard profiling and risk assessment (Section 4), as well as into the municipal annexes in Section 9. All municipalities were encouraged to include mitigation initiatives that specify continued and enhanced participation in the NFIP, and address their flood vulnerable structures and infrastructure, including Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties.

Westmoreland County and all participating municipalities have identified public outreach initiatives that include increasing public awareness of and participation in the NFIP.

Currently within Westmoreland County no municipalities participate in the CRS program. Increased participation in the CRS program will be supported by Westmoreland County as identified in their updated mitigation strategies.

### 3.6.5 FEMA Unified Hazard Mitigation Assistance (HMA)

By virtue of having a current, FEMA-approved HMP, Westmoreland County and all communities in the County are eligible to apply for and receive federal mitigation grant funding (Stafford Act 404 and 406) for eligible, cost-effective mitigation projects under the Unified HMA grant programs, including:

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

Sections 404 hazard mitigation funding and 406 hazard mitigation funding are two distinct funding criterion associated with mitigation funding. Participation in FEMA 404 HMGP may cover mitigation activities including raising, removing, relocating or replacing structures within flood hazard areas. FEMA 406 HMGP is applied to parts of a facility that were actually damaged by the disaster and the mitigation measure that provides protection from subsequent events.

Throughout this plan update process, participating municipalities were provided information, including FEMA brochures and publications, to inform them of these grant programs. The county and all municipalities were asked to identify any projects that were funded under these programs.

In 2012, the Unified HMA national program was offered in the Commonwealth, in addition to several HMGP opportunities in the wake of declared disasters in the Commonwealth. In particular, HMGP opportunities following Hurricane Irene (DR-4025) and Tropical Storm Lee (DR-4030) made available significant levels of HMGP funding in the Commonwealth.

As the county and municipalities updated their mitigation strategies, potential mitigation grant eligible projects have been indicated as such when identifying the potential funding source. Westmoreland County will continue to inform its municipalities as mitigation grant opportunities are announced by PEMA, and provide assistance as feasible and appropriate with the grant application process.

### 3.6.6 Capital Improvement Planning

Westmoreland County and many of the municipalities have capital improvements plans, identifying specific capital projects to be funded and completed according to a defined schedule. Some of these projects involve improvements to facilities and infrastructure that provide hazard mitigation benefits. As such, during this update process, the County and municipalities have been encouraged to consider the mitigation benefits associated with their known or anticipated capital projects as a way to help prioritize their execution and to develop awareness that mitigation grants may be available to help fund such projects.

### 3.6.7 Housing and Urban Development (HUD) and Community Development Block Grant (CDBG) Funding

Opportunities for the application of disaster recovery HUD and CDBG funding to support certain types of mitigation activities in Westmoreland County were reviewed as part of this plan update process.



#### 4.0 Risk Assessment

According to FEMA Guidance 386-2, “risk assessment is the process of measuring the potential loss of life, personal injury, economic injury and property damage resulting from natural hazards by assessing the vulnerability of people, buildings and infrastructure to natural hazards.” Westmoreland County’s risk assessment is organized into four sections. Section 4.1 describes the methodology and tools used to support the risk assessment process. Section 4.2 identifies the natural hazards of concern for further profiling and evaluation. In Section 4.3 profiles and assesses vulnerability for each hazard of concern. Lastly, Section 4.4, the identified hazards of concern are ranked for Westmoreland County as a whole to describe their probability of occurrence and their impact on population, property (general building stock including critical facilities) and the economy.

## 4.1 Methodology and Tools

This section describes the methodology and tools used to support the risk assessment process.

### 4.1.1 Methodology

The risk assessment process used for this updated Plan is consistent with the process and steps presented in FEMA 386-2, State and Local Mitigation Planning How-to-Guide, Understanding Your Risks – Identifying Hazards and Estimating Losses (FEMA, 2001). This process identifies and profiles the hazards of concern and assesses the vulnerability of assets (population, structures, critical facilities and the economy) at risk in the community. A risk assessment provides a foundation for the community's decision makers to evaluate mitigation measures that can help reduce the impacts of a hazard when one occurs (see Section 5.4). The following steps describe the risk assessment process.

**Step 1:** The first step of the risk assessment process is to identify the hazards of concern. FEMA's current regulations only require an evaluation of natural hazards. Natural hazards are natural events that threaten lives, property, and other assets. Often, natural hazards can be predicted, where they tend to occur repeatedly in the same geographical locations because they are related to weather patterns or physical characteristics of an area.

**Step 2:** The next step of the risk assessment is to prepare a profile for each hazard of concern. These profiles assist communities in evaluating and comparing the hazards that can impact their area. Each type of hazard has unique characteristics that vary from event to event. That is, the impacts associated with a specific hazard can vary depending on the magnitude and location of each event (a hazard event is a specific, uninterrupted occurrence of a particular type of hazard). Further, the probability of occurrence of a hazard in a given location impacts the priority assigned to that hazard. Finally, each hazard will impact different communities in different ways, based on geography, local development, population distribution, age of buildings, and mitigation measures already implemented.

**Steps 3 and 4:** To understand risk, a community must evaluate what assets it possesses and which assets are exposed or vulnerable to the identified hazards of concern. Hazard profile information combined with data regarding population, demographics, general building stock, and critical facilities at risk, prepares the community to develop risk scenarios and estimate potential damages and losses for each hazard. See Section 4.0 for critical facilities.

### 4.1.2 Tools

To address the requirements of DMA 2000 and better understand potential vulnerability and losses associated with hazards of concern, Westmoreland County used standardized tools, combined with local, state, and federal data and expertise to conduct the risk assessment. Tools used by Tetra Tech to support the risk assessment are described below.

#### **Hazards U.S. – Multi-Hazard (HAZUS-MH)**

In 1997, FEMA developed a standardized model for estimating losses caused by earthquakes, known as Hazards U.S. or HAZUS. HAZUS was developed in response to the need for more effective national-, state-, and community-level planning and the need to identify areas that face the highest risk and potential for loss. HAZUS was expanded into a multi-hazard methodology (HAZUS-MH) with new models for estimating potential losses from wind (hurricanes) and flood (riverine and coastal) hazards. HAZUS-MH is a Geographic Information System (GIS)-based software tool that applies engineering and scientific risk

calculations that have been developed by hazard and information technology experts to provide defensible damage and loss estimates. These methodologies are accepted by FEMA and provide a consistent framework for assessing risk across a variety of hazards. The GIS framework also supports the evaluation of hazards and assessment of inventory and loss estimates for these hazards.

HAZUS-MH uses GIS technology to produce detailed maps and analytical reports that estimate a community's direct physical damage to building stock, critical facilities, transportation systems, and utilities. To generate this information, HAZUS-MH uses default HAZUS-MH-provided data for inventory, vulnerability, and hazards; this default data can be supplemented with local data to provide a more refined analysis. Damage reports can include induced damage (inundation, fire, threats posed by hazardous materials and debris) and direct economic and social losses (casualties, shelter requirements, and economic impact) depending on the hazard and available local data. HAZUS-MH's open data architecture can be used to manage community GIS data in a central location. The use of this software also promotes consistency of data output now and in the future, and standardization of data collection and storage. The guidance "Using HAZUS-MH for Risk Assessment: How-to Guide" (FEMA 433) was relied upon to support the application of HAZUS-MH for this risk assessment and plan. More information on HAZUS-MH is available at <http://www.fema.gov/plan/prevent/hazus/index.shtm>.

In general, probabilistic analyses were performed to develop estimates of long-term average losses (annualized losses) for the earthquake and wind hazards, as well as an expected/estimated distribution of losses (mean return period losses) for the earthquake, flood, and wind hazards. The probabilistic hazard generates estimates of damage and loss for specified return periods. For annualized losses, HAZUS-MH 2.1 calculates the maximum potential annual dollar loss resulting from various return periods averaged on a "per year" basis. It is the summation of all HAZUS-supplied return periods (e.g., 10, 50, 100, 200, 500) multiplied by the return period probability (as a weighted calculation). In summary, the estimated cost of a hazard (earthquake and wind) each year is calculated.

Custom methodologies in HAZUS-MH 2.1 were used to assess potential exposure and losses associated with hazards of concern for Westmoreland County:

- **Inventory:** The default demographic data in HAZUS-MH 2.1, based on the 2000 U.S. Census, was used for analysis. However, the 2010 U.S. Census data was used to estimate hazard exposure at the municipal level.

The default building inventory in HAZUS-MH 2.1 was updated and replaced at the Census-block level with a custom building inventory developed for Westmoreland County. The custom building inventory was then developed using detailed structure-specific assessor data, as well as parcel and structure location information. Structural and content replacement cost values were calculated for each building utilizing available assessor data and RSMMeans 2011 values. An updated critical facility inventory was also developed and incorporated into HAZUS-MH replacing the default essential facility (police, fire, schools, etc.) and utility inventories.

The occupancy classes available in HAZUS-MH 2.1 were condensed into the following categories (residential, commercial, industrial, agricultural, religious, government, and educational) to facilitate the analysis and the presentation of results. Residential loss estimates address both multi-family and single-family dwellings.

The critical facility inventory (essential facilities, utilities, transportation features and user-defined facilities) was updated for the earthquake, flood and wind hazard models. This comprehensive inventory was developed by gathering input from numerous sources including

Westmoreland County GIS, participating municipalities and input from the Hazard Mitigation Working Group.

The “user-defined facilities” category includes all assets that Westmoreland County plan participants deemed critical to include in the inventory and that do not fit within a pre-defined HAZUS-MH facility category. These facilities include shelters, senior care facilities, and municipality-owned buildings.

- **Earthquake:** HAZUS-MH 2.1 was used to evaluate Westmoreland County’s risk to a seismic hazard. A probabilistic assessment was performed to analyze the earthquake hazard losses (annualized losses and 100-, 500- and 2,500-year mean return period [MRP] losses). The probabilistic method uses information from historic earthquakes and inferred faults, locations and magnitudes, and computes the probable ground shaking levels that may be experienced during a recurrence period by Census tract.

The National Earthquake Hazard Reduction Program (NEHRP) developed five soil classifications that impact the severity of an earthquake, ranging from A to E, where A represents hard rock that reduces ground motions from an earthquake and E represents soft soils that amplify and magnify ground shaking and increase building damage and losses. NEHRP soil classifications were not available for Westmoreland County at the time of this analysis. Soils were estimated as NEHRP soil Type D across Westmoreland County as a conservative approach to this risk assessment. Groundwater was set as at a depth of 5 feet (default setting). Damages and loss due to liquefaction, landslide or surface fault rupture were not included in this analysis.

Default demographic and the updated general building stock and critical facility inventory data in HAZUS-MH 2.1 were used for the earthquake analysis.

- **Flood:** The 1 percent and 0.2 percent chance flood events were examined to evaluate Westmoreland County’s risk and vulnerability to the riverine flood hazard. These flood events are generally those considered by planners and evaluated under federal programs such as the NFIP.

A Level 2 HAZUS-MH riverine flood analysis was performed. The Westmoreland County FEMA Digital Flood Insurance Rate Maps (DFIRMs) were used to evaluate exposure and determine potential future losses.

A 10-foot depth grid was developed for the 1 percent flood event for Westmoreland County. Using GIS tools and the best available data, including the DFIRM database and the 2008 3.2-foot Light Detection and Ranging (LiDAR) Bare Earth Digital Elevation Model (DEM) available from Pennsylvania Spatial Data Access – the Pennsylvania Geospatial Data Clearinghouse, a flood depth grid was generated and integrated into the HAZUS-MH riverine flood model.

To estimate exposure to the 1 percent and 0.2 percent flood events, the DFIRM flood boundaries, updated building and facility inventories, and 2010 U.S. Census population data were used. The HAZUS-MH 2.1 riverine flood model was run to estimate potential losses for Westmoreland County for the 1 percent flood event. HAZUS-MH 2.1 calculated the estimated potential losses to the population (default 2000 U.S. Census data) and potential damages to the updated general building stock and critical facility inventories based on the depth grid generated and the default HAZUS damage functions in the flood model.

- Hurricane/Wind: A HAZUS-MH 2.1 probabilistic analysis was performed to analyze the wind hazard losses for Westmoreland County. The probabilistic hurricane hazard activates a database of thousands of potential storms with tracks and intensities reflecting the full spectrum of Atlantic hurricanes observed since 1886, and then identifies those storms with tracks associated with the Planning Area. HAZUS-MH contains data on historic hurricane events and wind speeds. It also includes surface roughness and vegetation (tree coverage) maps for the area. Surface roughness and vegetation data support the modeling of wind force across various types of land surfaces. Annualized losses and the 100- and 500-year MRPs were examined for the wind/severe storm hazard. Default demographic and updated building and critical facility inventories in HAZUS-MH 2.1 were used for the analysis.
- Other Hazards: GIS tools including HAZUS-MH were used to evaluate other hazards (i.e., wildfire, landslide, etc.), as feasible. For many of the hazards evaluated in this risk assessment, historic data are not adequate to model future losses at this time. However, HAZUS-MH can map hazard areas and calculate exposures if geographic information hazard location and inventory data are available. For some other hazards of concern, areas and inventory susceptible to specific hazards were mapped and exposure was evaluated to help guide mitigation efforts (discussed further in Section 6.4). For other hazards, a qualitative analysis was conducted using the best available data and professional judgment.

For this risk assessment, the loss estimates, exposure assessments, and hazard-specific vulnerability evaluations rely on the best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their affects on the built environment. Uncertainties also result from the following:

- 1) Approximations and simplifications necessary to conduct such a study
- 2) Incomplete or dated inventory, demographic, or economic parameter data
- 3) The unique nature, geographic extent, and severity of each hazard
- 4) Mitigation measures already employed by the participating municipalities and the amount of advance notice residents have to prepare for a specific hazard event

These factors can result in a range of uncertainty in loss estimates, possibly by a factor of 2 or more. Therefore, potential exposure and loss estimates are approximate. These results do not predict precise results and should be used to understand relative risk. Over the long term, Westmoreland County will collect additional data to assist in developing refined estimates of vulnerabilities to natural and non-natural hazards.



## 4.2 Hazard Identification

In identifying those hazards that pose significant risk to Westmoreland County, the Hazard Mitigation Working Group (responsible for preparing the 2009 Westmoreland County HMP) reviewed additional information and historical records from a wide range of sources, and selected the following natural hazards for consideration and profiling in the original plan (the original “hazards of concern”):

### 4.2.1 Natural Hazards

- Floods
- Winter Storms
- Hurricanes, Tornadoes and Windstorms
- Drought and Water Supply Deficiencies
- Landslides
- Subsidence – Natural / Mine Related
- Earthquakes

### 4.2.2 Non-Natural Hazards

- Dam Failures
- Hazardous Materials
- Fire Hazards
- Transportation Accidents
- Energy Emergencies
- Fixed Nuclear Facility
- Nuclear Attack
- Terrorism

As part of the plan update process, the Hazard Mitigation Working Group reviewed the hazards of concern detailed in the 2009 plan as well as those identified in the State HMP, and considered the historical occurrence of events in Westmoreland County as well events occurring after completion of the 2009 plan. This review of historical events included an evaluation of all Emergency and Disaster Declarations in the Commonwealth, with a focus on those in which Westmoreland County was designated for federal assistance.

Further, all jurisdictions participating in the plan update process were provided a “Hazard Identification/Evaluation of Risk” worksheet to help identify those hazards, natural and non-natural, that each community believed posed significant risk to Westmoreland County, including any that may not have been considered in either the 2009 plan or the State HMP. Completed worksheets submitted by the municipalities may be found in Appendix D.

Based on all available information and input from the municipalities, the Hazard Mitigation Working Group selected the following natural and non-natural hazards for consideration in this plan update:

### 4.2.3 Natural Hazards

- Avalanche
- Drought
- Earthquake
- Extreme Temperature
- Flood
- Hailstorm
- Hurricanes, Tropical Storms
- Landslide
- Lighting Strike
- Radon Exposure
- Subsidence / Sinkhole
- Wildfire
- Windstorm, Tornado
- Winter Storm

### 4.2.4 Non-Natural Hazards

- Dam Failure
- Environmental Hazards (Explosions)
- Fire (Urban, Structural)
- Levee Failure
- Nuclear Incidents
- Terrorism
- Transportation Accidents
- Utility Outage/Interruption

These hazards have been profiled individually in Section 4.3 of this plan update.

### 4.3 Hazard Profiles and Vulnerability Assessment

The following sections profile and assess vulnerability for each hazard of concern. For each hazard, the profile includes: the hazard description; its location and extent; previous occurrences and losses; and the probability of future events. The vulnerability assessment for each hazard includes: an overview of vulnerability; the data and methodology used; the impact on life, health and safety; impact on general building stock; impact on critical facilities; impact on the economy; additional data needs and next steps; and the overall vulnerability assessment finding.

### 4.3.1 Avalanche

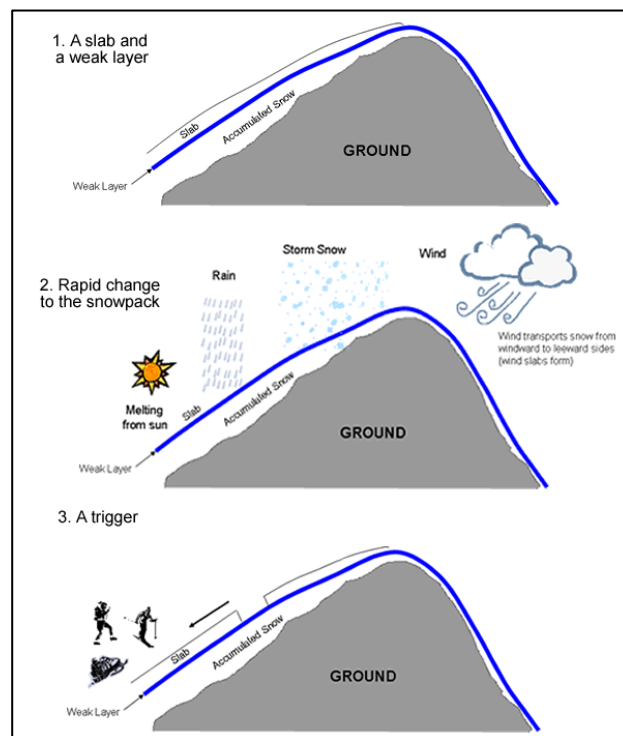
An avalanche is a fast moving flow of snow and ice down a mountain slope that uproots trees and anything in its path. Many factors lead up to an avalanche, including weather, temperature, steepness of slope, direction of the slope, vegetation, wind direction, terrain, and snow pack conditions. All of these factors can change by the hour, rendering an avalanche unpredictable and extremely dangerous (University of Vermont, Date Unknown). About 90% of all avalanches start on slopes of 30-45 degrees; about 98% of all avalanches occur on slopes of 25-50 degrees. Typically, avalanches do not occur on slopes steeper than 50 degrees, as snow does not accumulate on these slopes. Avalanche cycles are typically preceded by large snowfall events (San Miguel County Hazard Mitigation Plan [HMP] 2011).

Avalanches release most often on slopes above timberline that face away from prevailing winds (leeward slopes collect snow blowing from the windward sides of ridges.) Avalanches can run, however, on small slopes well below timberline, such as gullies, road cuts, and small openings in the trees. Very dense trees can anchor the snow to steep slopes and prevent start of avalanches; however, avalanches can release and travel through a moderately dense forest.

The three types of avalanches are loose, sluff, and slab. The two types of slab avalanches are soft and hard. Avalanches can be either dry or wet. Avalanches occur for one of two basic reasons—either the load on a slope increases faster than snow strength or snow strength decreases.

Slab avalanches occur when a more cohesive or harder layer of snow sets up on top of a less cohesive or softer and weaker layer of snow. Sometimes the weaker snow can barely support the layers above it, and when weight is added to the upper layers, the weak layer collapses, the snowpack fractures, and a slab avalanche occurs. Slab avalanches often involve large volumes of fast moving snow (U.S. Forest Service National Avalanche Center, Date Unknown). Figure 4.3.1-1 illustrates a slab avalanche.

**Figure 4.3.1-1: Slab Avalanche**



Source: WMD EMD 2014

Although the most dangerous avalanche is the slab avalanche, loose slides can and do produce injury and death. Loose avalanches occur when grains of snow cannot hold onto a slope and begin sliding downhill, picking up more snow and fanning out in an inverted V.

A sluff is a cold snow powdery surface slide that typically is the least dangerous type of avalanche. However, sluffs can and often do injure skiers and snowboarders by pushing them over cliffs and rock bands in steep terrains (U.S. Forest Service National Avalanche Center, Date Unknown).

Wet avalanches occur when warm temperatures melt the surface snow layers and saturate them with water. The water weakens the bonds between layers, and an avalanche occurs. Wet avalanches move more slowly than dry avalanches, but they can be very dangerous. If temperatures have been above freezing for extended periods of time, wet avalanches will most likely occur (U.S. Forest Service National Avalanche Center, Date Unknown).

#### 4.3.1.1 Location and Extent







Most avalanches occur in remote, mountainous locations away from populated areas. As a result, many avalanches go unnoticed. An avalanche becomes a hazard when populations and facilities become exposed to avalanche areas.

The Avalanche Danger Scale is an ordinal, five-level warning system that is a cornerstone of public avalanche information. The system was developed in Europe in 1993, and was introduced to North America in 1994. Although both Canada and the United States adopted the system, different descriptors of the danger levels were developed in each country. In 2005, noted deficiencies in clarity during low probability/high consequence avalanche conditions were addressed. Figure 4.3.1-2 shows this updated scale, which is used to estimate potential property damage and flooding from an avalanche (Statham et al. 2010).

Within Westmoreland County, multiple factors affect the probability of the occurrence of an avalanche. While many contributing factors to an avalanche are unpredictable – such as type of snow, direction of wind, and temperature – some factors are constant. Generally speaking in Westmoreland County, these constant factors include topographical composition of a potentially susceptible area. Such areas are remote, vegetated areas with a slope profile of 30 to 45 degrees. Approximate avalanche hazard zones may be identified as additional resources become available, allowing communities to more specifically identify potentially vulnerable areas. The methodology may include determinations of slope via high-resolution digital elevation models.



**Figure 4.3.1-2. North American Avalanche Danger Scale**

North American Public Avalanche Danger Scale				
Avalanche danger is determined by the likelihood, size and distribution of avalanches.				
Danger Level		Travel Advice	Likelihood of Avalanches	Avalanche Size and Distribution
<b>5 Extreme</b>		Avoid all avalanche terrain.	Natural and human-triggered avalanches certain.	Large to very large avalanches in many areas.
<b>4 High</b>		Very dangerous avalanche conditions. Travel in avalanche terrain <u>not</u> recommended.	Natural avalanches likely; human-triggered avalanches very likely.	Large avalanches in many areas; or very large avalanches in specific areas.
<b>3 Considerable</b>		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Natural avalanches possible; human-triggered avalanches likely.	Small avalanches in many areas; or large avalanches in specific areas; or very large avalanches in isolated areas.
<b>2 Moderate</b>		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.	Natural avalanches unlikely; human-triggered avalanches possible.	Small avalanches in specific areas; or large avalanches in isolated areas.
<b>1 Low</b>		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.	Natural and human-triggered avalanches unlikely.	Small avalanches in isolated areas or extreme terrain.
Safe backcountry travel requires training and experience. You control your own risk by choosing where, when and how you travel.				
<b>No Rating</b>		Insufficient information to establish avalanche danger rating. Check zone forecast for local information.		

Source: Colorado Avalanche Information Center, 2013

#### 4.3.1.2 Range of Magnitude

Although not fully understood, some relationship is apparent between the area and length of the runout zone (the portion of an avalanche path where debris stops), and the frequency or probability of the avalanche. This is called the magnitude/frequency relationship. The relationship is usually expressed as the return period (or annual probability) of occurrence of an avalanche that will travel some specified distance into the runout zone. Avalanche size has no definable upper limit. One can always imagine an event slightly larger (and less likely) than the previous one. Nevertheless, a practical upper size limit is plausible beyond which probability of encounter with an avalanche is so small as to be similar to probabilities of other risks we normally take in our activities (Mears 2001).<sup>1</sup>

Evidently, severity of hazard depends on both the magnitude/frequency relationship and on human use of the area. For example, placing a public facility that would concentrate large numbers of people for long periods of time within a hazard area creates a much more severe hazard than would be posed by periodic exposure of cross-country skiers at the same location. Response of an avalanche to weather and snowpack conditions would not change, but the hazard would depend on *both* avalanche magnitude/frequency relationships and total exposure time of people and facilities. The permanent facility is a fixed target (Mears 2001).

A number of weather, terrain and snowpack factors determine the general range of magnitude of avalanche danger:

Weather:

- **Storms** – A large percentage of all snow avalanches occur during and shortly after storms.
- **Rate of snowfall** – Snow falling at a rate of 1 inch or more per hour rapidly increases avalanche danger.

<sup>1</sup> <http://www.avalanche.org/moonstone/zoning/AVALANCHE%20ZONING.htm>

- **Temperature** – Storms starting with low temperatures and dry snow, followed by rising temperatures and wetter snow, are more likely to cause avalanches than storms that start warm and then cool with snowfall.
- **Wet snow** – Rainstorms or spring weather with warm, moist winds and cloudy nights can warm the snow cover, resulting in wet snow avalanches. Wet snow avalanches are more likely on sun-exposed terrain (south-facing slopes) and under exposed rocks or cliffs. Wind is the most common cause of avalanches. Wind can deposit snow 10 times faster than snow falling from storms. Wind erodes snow from the upwind side of obstacles and deposits snow on the downwind (lee) side. This is called "wind loading."

Terrain:

- **Ground cover** – Large rocks, trees, and heavy shrubs help anchor snow, but also create stress concentrations between anchored and unanchored snow.
- **Slope profile** – Dangerous slab avalanches are more likely to occur on convex slopes that produce stress concentrations within surface snow due to varying creep rates.
- **Slope aspect** – Leeward slopes are dangerous because windblown snow adds depth and creates dense slabs. South facing slopes are more dangerous in the springtime due to increasing solar effects.
- **Slope steepness** – Snow avalanches are most common on slopes of 30 to 45 degrees.

Snowpack:

- **Snow texture** – This is the feel, appearance, or consistency of the snow determined by the shape, size, and attachment of snow grains that comprise the particular snow layer. Also included in this is the inter-granular relationship—overall feel of a snow layer, specifically the relative quantities of the different types and sizes of snow particles in a particular layer, and sizes, shapes, and arrangement of grains as seen with a hand lens. A layer of small-grained, moist snow has a distinctly different texture—much more cohesive and able to make snowballs—than well-faceted snow that falls apart in one’s hands and exhibits very little internal cohesion.
- **Snow layering** – The snowpack is composed of ground-parallel layers that accumulate over the winter. Each layer contains ice grains that are representative of the distinct meteorological conditions during which the snow formed and was deposited. Once deposited, a snow layer continues to evolve under the influence of meteorological conditions that prevail after deposition.
- **Snow bonding** – In the absence of strong temperature gradients within a dry snowpack, this is the normally stabilizing or “rounding” process whereby individual snow grains or layers come into contact and gradually strengthen the ice skeleton or snow layer(s) through sintering or formation of ice “necks” between the grains. This sintering process results from shape- or size-driven vapor pressure differences between or within grains or layers, and involves preferential transfer of water vapor and subsequent vapor deposition. The associated redistribution of water vapor results in inter-granular attachments or bonds between grains through an expanding ice matrix, and typically results in gradual strengthening of the surrounding snowpack structure. However and notably, if strong temperature gradients occur within or between snow layers, a different metamorphic process in the snow cover can result in what is known as faceting—a process that results in new crystal growth and/or recrystallization of existing snow grains, often producing general weakening of the snow structure. Faceting is characterized by strong (often local) temperature gradients in the snow pack and resulting strong vapor pressure gradients that move mass from warmer grains (higher vapor pressure) to colder grains (lower vapor pressure). As the process evolves and more mass is transferred, faceting snow loses existing grain bonds, forms new grains, and in general becomes more disaggregated and sugary (hence the related term

“sugar snow”). Observations and tests have revealed that the hardness of a faceting snow layer decreases with time, and it becomes easier to penetrate and pull individual faceted grains out of a snow pit wall (WMD EMD 2014).

The worst-case avalanche to occur in Westmoreland County was on March 2, 1994, causing nearly \$7,400 dollars in property damage. No other information was available.

#### 4.3.1.3 Past Occurrence

According to the Spatial Hazards Events and Losses for the United States (SHELDUS), Westmoreland County has undergone one avalanche (on March 2, 1994), which caused nearly \$7,400 dollars in property damage. Though SHELDUS provided information regarding the avalanche occurrence within Westmoreland County, no additional data is provided regarding this event, including the municipality in which this event occurred. In addition, despite discussions with the Hazard Mitigation Working Group and other hazard research, no additional information was found regarding this event.

#### 4.3.1.4 Future Occurrence

The factors that contribute to the avalanche hazard are difficult to measure on an annual basis. Conditions contributing to an avalanche include accumulated snow, type of snow, temperature, and stress factors associated with an avalanche. Moreover, most avalanches occur well away from populated areas. Based upon the Risk Factor Methodology Probability Criteria, probability of an avalanche hazard within Westmoreland County is classified as *unlikely*.

#### 4.3.1.5 Vulnerability Assessment

To understand risk, assets exposed to hazard areas are identified. Regarding the avalanche hazard, Westmoreland County is exposed within areas where avalanches may occur—specifically, topographical areas within which appropriate slope and conditions occur for development of an avalanche.

##### 4.3.1.5.1 Overview of Vulnerability

Avalanches can impact transportation corridors, businesses, and private residents, depending on locations of development and infrastructure within hazard-prone areas. Given their volatility, avalanches can significantly damage infrastructure, cause loss of life, and strain lifelines and emergency responders.

##### 4.3.1.5.2 Data and Methodology

National weather databases, the Pennsylvania HMP, and local resources were referenced to identify and analyze hazard impacts on Westmoreland County. Avalanche hazard areas of Westmoreland County were not specified in the available sources. The following are qualitative discussions of the County’s vulnerability to the avalanche hazard.

##### 4.3.1.5.3 Impact on Life, Health, and Safety

The avalanche hazard poses the highest threat to individuals or small groups in remote, backcountry settings during winter and early spring months.

#### 4.3.1.5.4 Impact on General Building Stock, Critical Facilities and the Economy

No structures or critical facilities are exposed to the avalanche hazard. The Steering Committee and Municipal partners indicated that an avalanche would not likely affect them. As mentioned earlier, Westmoreland County has undergone one avalanche event, resulting in nearly \$7,400 in property damage.

#### 4.3.1.5.5 Future Growth and Development

Areas targeted for potential future growth and development within the next 5 to 10 years have been identified across the County. Refer to Section 4.4 in this HMP.

#### 4.3.1.5.6 Effect of Climate Change on Vulnerability

The definition of “climate” includes not just average temperature and precipitation, but also type, frequency, and intensity of weather events. Both globally and at the local scale, climate change can alter prevalence and severity of extreme events such as hailstorms. While predicting changes of storm events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating impacts of future climate change on human health, society, and the environment (U.S. Environmental Protection Agency [EPA] 2006).

Pennsylvania’s Department of Environmental Protection was obligated by the Climate Change Act (Act 70 of 2008) to initiate a study of potential impacts of global climate change on the Commonwealth. The June 2009 Pennsylvania Climate Impact Assessment’s main findings indicate likelihood that Pennsylvania will undergo increased temperatures in the 21st century. Future improvements in modeling smaller scale climatic processes can be expected, and will lead to improved understanding of how the changing climate will alter events in Pennsylvania (Shortle et. al, 2009).

#### 4.3.1.5.7 Additional Data and Next Steps

The assessment above identifies vulnerable populations and potential structural and economic losses associated with this hazard of concern. Collection of additional/actual loss data specific to the Plan participants will further enhance Westmoreland County’s vulnerability assessment.

### 4.3.2 Drought

This section provides a profile and vulnerability assessment for the drought hazard for Westmoreland County. Drought is a period characterized by long durations of below normal precipitation. Drought conditions occur in virtually all climatic zones, yet its characteristics vary significantly from one region to another, because is relative to the normal precipitation in that region. Drought can affect agriculture, water supply, aquatic ecology, wildlife, and plant life. Drought is a temporary irregularity in typical weather patters and differs from aridity, which reflects low rainfall in a specific region and is a permanent feature of the climate of that area.

There are four different ways that drought can be defined or grouped:

- Meteorological drought is a measure of departure of precipitation from normal. It is defined solely on the relative degree of dryness. Because of climatic differences, dryness considered to be a drought in one location of the country may not be considered drought in another location.
- Agricultural drought links various characteristics of meteorological (or hydrological) drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced groundwater or reservoir levels, and other parameters. Agricultural drought occurs when not enough water is available for a particular crop to grow at a particular time. Agricultural drought is defined in terms of soil moisture deficiencies relative to water demands of plant life, primarily crops.
- Hydrological drought is associated with the effects of periods of precipitation shortfalls (including snowfall) on surface or subsurface water supply and occurs when these water supplies are below normal. Hydrological drought is related to the effects of precipitation shortfalls on stream flows and water levels in reservoirs, lakes, and groundwater.
- Socioeconomic drought is associated with the supply and demand of an economic good, with elements of meteorological, hydrological, and agricultural drought. This differs from the aforementioned types of drought because its occurrence depends on supply and demand to identify or classify droughts. The supply of many economic goods depends on weather, such as water, silage, food grains, fish, and hydroelectric power). Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related shortfall in water supply (National Drought Mitigation Center ([NDMC] 2012).

Drought can produce a range of impacts that span many sectors of an economy and can reach beyond an area experiencing physical drought. Because water is integral to our ability to produce goods and provide services, drought can cause impacts including reduced crop yield, increased fire hazard, reduced water levels, and damage to wildlife and fish habitat. The consequences of these impacts illustrate indirect impacts that include reduction in crop, rangeland, and forest productivity that may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, and reduced tax revenues due to reduced expenditures, increased crime, foreclosures, migration, and exhausted disaster relief funds. The many impacts of drought can be categorized as economic, environmental, or social.



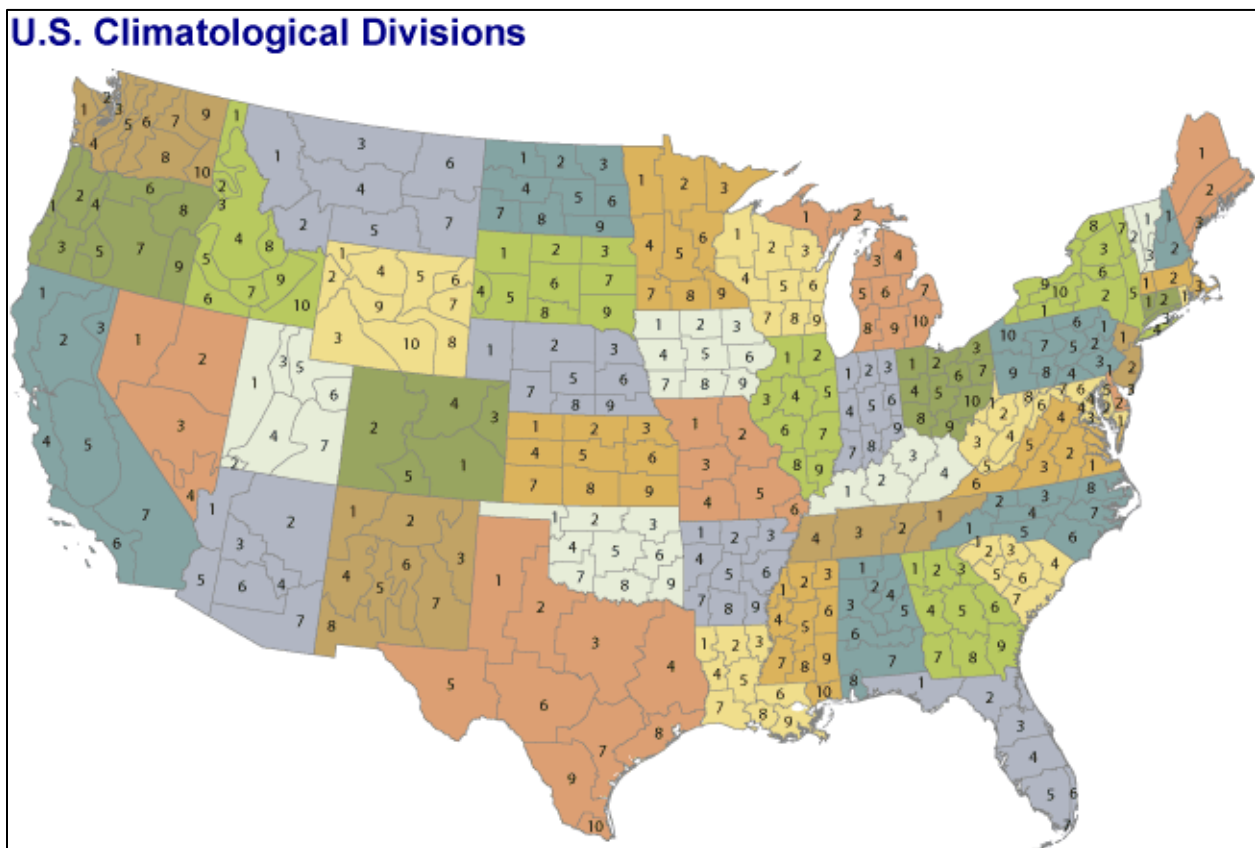
### 4.3.2.1 Location and Extent

Droughts are regional in scope and may affect the entirety of Westmoreland County, as opposed to individual municipalities within the County. In general, areas along waterways will show drought conditions later than those areas away from waterways.

Climate divisions are regions within a state that are climatically homogenous. The National Oceanic and Atmospheric Administration (NOAA) has divided the United States into 359 climate divisions. The boundaries of these divisions typically coincide with the county boundaries, except in the western United States where they are based largely on drainage basins (CPC 2005).

According to NOAA, Pennsylvania is made up of 10 climate divisions: Pocono Mountains, East Central Mountains, Southeastern Piedmont, Lower Susquehanna, Middle Susquehanna, Upper Susquehanna, Central Mountains, South Central Mountains, Southwest Plateau, and Northwest Plateau Climate Division (National Climatic Data Center [NCDC] 2012). Figure 4.3.2-1 shows the climate divisions throughout the United States and Figure 4.3.2-2 shows the climate divisions of Pennsylvania. Westmoreland County is located in the Southwest Plateau climate division.

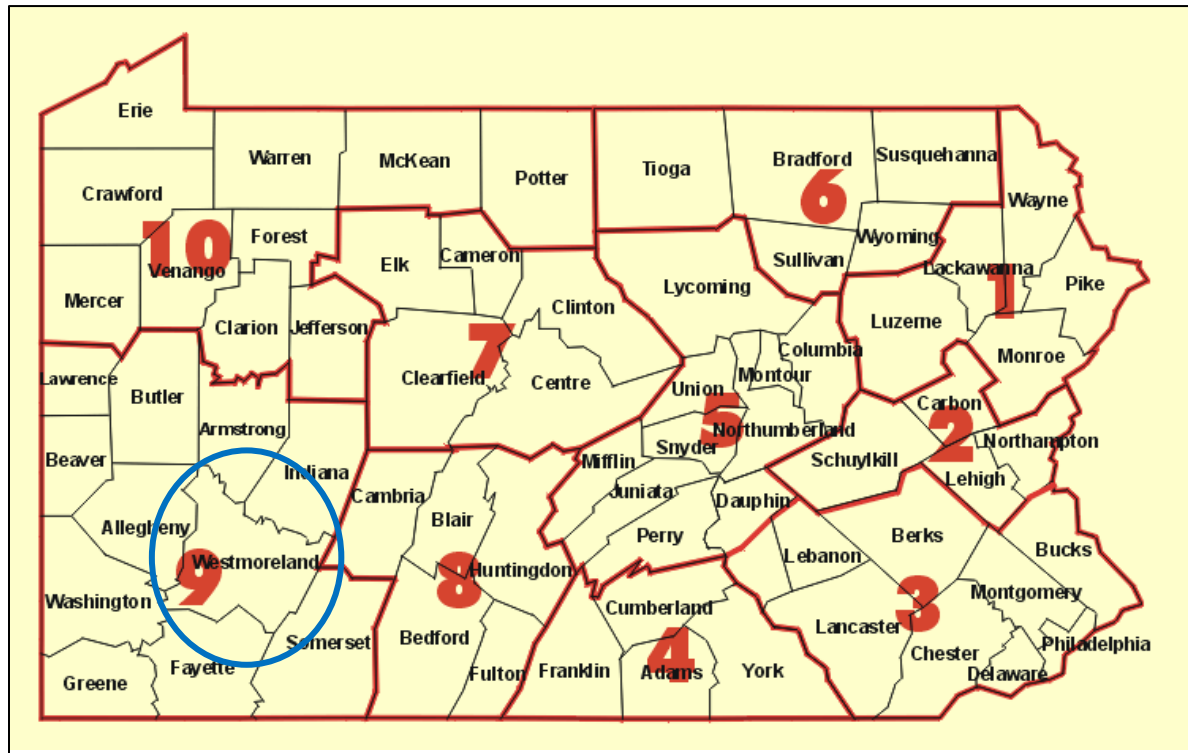
*Figure 4.3.2-1. Climate Divisions in the United States*



Source: NCDC 2012

Note: The climate division names vary from state to state. The climate divisions for Pennsylvania are:

- 1 = Pocono Mountains; 2 = East Central Mountains; 3 = Southeastern Piedmont; 4 = Lower Susquehanna; 5 = Middle Susquehanna; 6 = Upper Susquehanna; 7 = Central Mountains; 8 = South Central Mountains; 9 = Southwest Plateau; 10 = Northwest Plateau

*Figure 4.3.2-1 Climate Divisions of Pennsylvania*

Source: CPC 2005

Note: Highlight added.

The climate divisions for Pennsylvania are:

1 = Pocono Mountains; 2 = East Central Mountains; 3 = Southeastern Piedmont; 4 = Lower Susquehanna; 5 = Middle Susquehanna; 6 = Upper Susquehanna; 7 = Central Mountains; 8 = South Central Mountains; 9 = Southwest Plateau; 10 = Northwest Plateau

#### 4.3.2.2 Range of Magnitude

Droughts can have varying effects depending on their severity, timing, duration, and location. Some droughts may have their greatest impact on agriculture, while others may have stronger impacts on water supply or recreational activities. When droughts occur, they can have significant adverse effects on the following:

- Public water supplies for human consumption
- Rural water supplies for livestock consumption and agricultural operations
- Water quality
- Natural soil water or irrigation water for agriculture
- Water for forests and for fighting forest fires
- Water for navigation and recreation

As described in the Commonwealth of Pennsylvania 2010 Standard Hazard Mitigation Plan (PA HMP), Pennsylvania Department of Environmental Protection (PADEP) and Pennsylvania Emergency

Management Agency (PEMA) manage water supply droughts in Pennsylvania using four drought-phase conditions. These drought-phase conditions are defined in the PA HMP as follows:

- **Drought Watch**: A period to alert government agencies, public water suppliers, water users, and the public regarding the potential for future drought-related problems. The focus is on increased monitoring, awareness, and preparation for response in the event that conditions worsen. A request for voluntary water conservation is made. The objective of voluntary water conservation measures during a drought watch is to reduce water use by 5 percent in the affected areas. Because of varying conditions, individual water suppliers or municipalities may ask for more stringent conservation actions.
- **Drought Warning**: This phase involves a coordinated response to imminent drought conditions and potential water supply shortages through concerted voluntary conservation measures to avoid or reduce shortages, relieve stressed sources, develop new sources, and if possible, forestall the need to impose mandatory water use restrictions. The objective of voluntary water conservation measures during a drought warning is to reduce overall water use by 10 to 15 percent in the affected areas. Because of varying conditions, individual water suppliers or municipalities may ask for more stringent conservation actions.
- **Drought Emergency**: During this stage, water management entities marshal all available resources to respond to actual emergency conditions, avoid depletion of water sources, ensure at least minimum water supplies to protect public health and safety, support essential and high-priority water uses, and avoid unnecessary economic dislocations. It is possible during this phase to impose mandatory restrictions on nonessential water usage as provided for in 4 Pa. Code Chapter 119, if deemed necessary and if ordered by the Governor. The objective of water use restrictions (mandatory or voluntary) and other conservation measures during this phase is to reduce consumptive water use in the affected areas by 15 percent, and to reduce total use to the extent necessary to preserve public water system supplies, avoid or mitigate local or area shortages, and ensure equitable sharing of limited supplies.
- **Local Water Rationing**: Although not a drought phase, local municipalities may, with the approval of the Pennsylvania Emergency Management Council, implement local water rationing to share a rapidly dwindling or severely depleted water supply in designated water supply service areas. These individual water rationing plans, authorized through provisions of 4 Pa. Code Chapter 120, will require specific limits on individual water consumption to achieve significant reductions in use. Under both mandatory restrictions imposed by the Commonwealth and local water rationing practices, procedures are provided for granting of variances to consider individual hardships and economic dislocations (PEMA 2010).

Pennsylvania uses five parameters to assess drought conditions: precipitation deficits, stream flows, reservoir storage levels, groundwater levels, and a measure of soil moisture. These are described in detail below.

- **Precipitation Deficits**: As rainfall provides the basis for both ground and surface water resources, precipitation deficits are the earliest indicators of a potential drought. The National Weather Service (NWS) records “normal” monthly precipitation data for each county in Pennsylvania. These figures are generated from long-term monthly and decennial averages of precipitation, and are updated at the end of each decade based on the most recent 30 years. Monthly totals that are less than the normal values represent precipitation deficits, which are then converted to percentages of the normal values. Table 4.3.2-1 lists the drought conditions, as defined in the PA

HMP and noted above, that are indicated by various precipitation deficit percentages (PEMA 2010).

**Table 4.3.2-1. Precipitation Deficit Drought Indicators for Pennsylvania**

Duration of Deficit Accumulation (months)	Drought Watch (deficit as percent of normal precipitation)	Drought Warnings (deficit as percent of normal precipitation)	Drought Emergency (deficit as percent of normal precipitation)
3	25	35	45
4	20	30	40
5	20	30	40
6	20	30	40
7	18.5	28.5	38.5
8	17.5	27.5	37.5
9	16.5	26.5	36.5
10	15	25	35
11	15	25	35
12	15	25	35

Source: PEMA 2010

Table 4.3.2-2 shows the precipitation normal, from 1981 to 2010, for the NOAA weather stations in Westmoreland County. These numbers are available through the National Climatic Data Center (NCDC), which compiles monthly and annual normal total precipitation (inches) data retrieved from both National Weather Service Cooperative Network (COOP) and Principal Observation (First-Order) locations throughout the United States.

**Table 4.3.2-2. Monthly and Annual Precipitation Normal (total in inches) from 1981 to 2010 at NOAA Weather Stations in Westmoreland County**

Station Name	January	February	March	April	May	June	July	November	September	October	November	December	ANNUAL
Derry	3.63	3.2	3.93	4.25	5.03	4.78	5.1	4.21	4.18	3.04	4.17	3.73	49.24
Donegal	4.05	2.93	3.47	3.8	4.29	4.46	4.4	3.74	3.6	3.01	3.95	3.22	44.9
Laurel Mountain	3.99	3.12	4.05	4.48	5.11	5.36	4.8	4.37	4.1	3.15	4.6	3.63	50.77
Mount Pleasant	2.97	2.62	3.53	3.68	4.27	4.43	4.5	3.84	3.57	2.74	3.92	3.12	43.16
New Stanton	2.78	2.61	3.19	3.3	4.03	3.88	4.0	3.46	3.48	2.44	3.6	2.76	39.49
Vandergrift	2.74	2.33	3.33	3.39	3.9	4.85	4.5	3.47	3.37	2.62	3.51	2.62	40.65

Source: NCDC 2011

- **Stream Flows:** Stream flows, which typically lag up to 2 months behind precipitation normals in signaling a drought, offer the second earliest indication of drought conditions. PADEP uses 73 U.S. Geological Survey (USGS)-maintained stream gauges throughout the State as its drought monitoring network, computing 30-day average stream flow values for each of the stream gauges based on the entire period of record for each gauge. For example, the Youghiogheny River gauge in Sutersville has data records as far back to October 1920 from which the long-term 30-day average, or normal, flows are now determined. Drought status is determined from stream flows based on exceedances rather than percentages. The various stages of drought watch, warning, and emergency conditions are indicated by the 75-, 90-, and 95- percent exceedance 30-day average flows, respectively (PEMA 2010). Detailed descriptions of these data collection methods are provided in the PA HMP.
- **Reservoir Storage Levels:** Water level storage in several large public water supply reservoirs is another indicator that the PADEP uses for drought monitoring. Depending on the total quantity of storage and the length of the refill period for the various reservoirs, PADEP uses varying percentages of storage draw down to indicate the three drought stages for each of the reservoirs (PEMA 2013).
- **Groundwater Levels:** Groundwater levels can be an indicator of a developing drought, though low readings may lag up to 3 months behind drought-indicative precipitation readings. This lag is due to the nearly 80 trillion gallons of groundwater stored throughout the Commonwealth, which disguises precipitation deficits for many months before experiencing significant and noticeable effects of the lack of groundwater recharge (PEMA 2013).

USGS also maintains groundwater monitoring wells in each county throughout the Commonwealth. Groundwater measurements taken from these wells at exceedances of 75, 90, and 95 percent are used to indicate drought watch, warning, and emergency statuses, respectively. Amongst the USGS well network,

the 30-day average depth-to-groundwater readings are analyzed in relation to long-term 30-day averages based on the period of record for each county well (PEMA 2010).

Soil Moisture: NOAA’s Palmer Drought Severity Index (PDSI) provides soil moisture information for evaluating the scope, severity, and frequency of prolonged periods of abnormally dry or wet weather. The tool is frequently used to indicate the availability of irrigation water supplies, reservoir levels, range conditions, amount of stock water, and forest fire potential. The PDSI is a notably ineffective tool for short-term drought monitoring forecasts; however, it is the most effective for determining long-term droughts, and as such is most frequently used to delineate disaster areas (CPC 2005).

Table 4.3.2-3 lists the PDSI Classifications. According to the PDSI, 0 is used to reflect normal status, and negative numbers indicate droughts. For example, 0 is no drought, -2 is moderate drought, and -4 is extreme drought. Positive numbers represent excess precipitation (NDMC 2013).

**Table 4.3.2-3. Palmer Drought Severity Index (PDSI) Classifications**

Severity Category	PDSI Value	Drought Status
Extremely wet	4.0 or more	None
Very wet	3.0 to 3.99	None
Moderately wet	2.0 to 2.99	None
Slightly wet	1.0 to 1.99	None
Incipient wet spell	0.5 to 0.99	None
Near normal	0.49 to -0.49	None
Incipient dry spell	-0.5 to -0.99	None
Mild drought	-1.0 to -1.99	None
Moderate drought	-2.0 to -2.99	Watch
Severe drought	-3.0 to -3.99	Warning
Extreme drought	-4.0 or less	Emergency

Source: NDMC 2013; PEMA 2010

Water supply availability and management is discussed in the 2009 Pennsylvania State Water Plan, a joint effort by the Statewide Water Resources Committee and PADEP. In 2009, the PADEP Secretary approved an updated State Water Plan to guide the management of the State’s water resources over a 15-year planning horizon. As a functional planning tool for all Pennsylvania municipalities, counties, and regional planning partnerships, the State Water Plan profiles drought and resource constraints and encourages the implementation of new technology and use policies to facilitate reduced water uses and resource demands at critical peak times. The plan provides inventories of water availability, as well as an assessment of current and future water use demands and trends. It also offers strategies for improving the management of water resources and waterway corridors that aim to reduce damages from extreme drought and flooding conditions (PADEP 2009).

#### 4.3.2.3 Past Occurrence

Many sources provided historical information regarding previous occurrences and losses associated with drought events throughout Pennsylvania and Westmoreland County specifically. With so many sources reviewed for the purpose of this Plan, loss and impact information for many events could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this Plan.



According to NOAA’s NCDC storm events database, Westmoreland County experienced only one drought event between April 30, 1950 and April 30, 2013; the drought occurred during November and September 1999. Statewide crop losses were estimated to have been at least \$700 million, which includes damages in other counties. The drought during September 1999 is also shown in the Hazard Research Lab at the University of South Carolina’s Spatial Hazard Events and Losses Database for the United States (SHELDUS), which includes events between 1960 and 2010.

Since 1930, the Commonwealth of Pennsylvania experienced ten significant droughts. Since 1955, the Commonwealth experienced 12 drought events that resulted in a Governor’s proclamation or a Federal Emergency Management Agency (FEMA)-declared disaster or emergency. Westmoreland County was included in one of these events. In addition to these events, PADEP indicated that Westmoreland County has experienced 10 drought-watch declarations, five drought-warning declarations, and one drought-emergency declaration between the years of 1980 and 2009 (PEMA 2010).

Between 1954 and 2013, FEMA declared that Pennsylvania experienced one drought-related disaster (DR) or emergency (EM) classified as one or a combination of the following disaster types: drought or water shortage. Generally, these disasters cover a wide region of the Commonwealth; therefore, they may have impacted many counties. However, not all counties were included in the disaster declaration. FEMA, PEMA, and other sources indicate that Westmoreland County has not been declared as a disaster area as a result of a drought-related event (FEMA 2013).

Based on all sources researched, known drought events between 1895 and 2013 that have affected Westmoreland County are identified in Table 4.3.2-4. Not all sources have been identified or researched; therefore, Table 4.3.2-4 may not include all events that have occurred throughout the County.

*Table 4.3.2-4. Past Occurrences of Drought Events from 1895 to 2013*

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts / PDSI Value	Source(s)
July 1895 - November 1896	Drought	N/A	N/A	-5.36 in 1/1896	NRCC
October - November 1897	Drought	N/A	N/A	-3.65 in 10/1897	NRCC
November 1899 - January 1900	Drought	N/A	N/A	-3.06 in 1/1900	NRCC
April 1900 - May 1901	Drought	N/A	N/A	-5.25 in 2/1901	NRCC
October 1901 - January 1902	Drought	N/A	N/A	-4.19 in 11/1901	NRCC
November 1904 - July 1905	Drought	N/A	N/A	-3.89 in 12/1904	NRCC
October 1908 - March 1909	Drought	N/A	N/A	-5.32 in 12/1908	NRCC
September - December 1909	Drought	N/A	N/A	-4.15 in 12/1909	NRCC
March - December 1910	Drought	N/A	N/A	-4.20 in 8/1910	NRCC
February - March 1911	Drought	N/A	N/A	-3.20 in 3/1911	NRCC
May - July 1911	Drought	N/A	N/A	-4.29 in 7/1911	NRCC
April - May 1915	Drought	N/A	N/A	-3.37 in 4/1915	NRCC
November 1922 - November 1923	Drought	N/A	N/A	-5.53 in 12/1922	NRCC
November 1925 - September 1925	Drought	N/A	N/A	-3.89 in 9/1925	NRCC
July 1930 - December 1931	Drought	N/A	N/A	-7.38 in 1/1931	NRCC
May 1932 - February 1933	Drought	N/A	N/A	-4.43 in 9/1932	NRCC
May - July 1934	Drought	N/A	N/A	-4.01 in 7/1934	NRCC
November 1939 - January 1940	Drought	N/A	N/A	-4.00 in 1/1940	NRCC
October 1953 - July 1954	Drought	N/A	N/A	-5.18 in 12/1953	NRCC
September 1963 - February 1964	Drought	N/A	N/A	-4.23 in 12/1963	NRCC
July - September 1965	Drought	DR-206	N/A	-3.68 in 8/1965	NRCC
July 1966 - February 1967	Drought	N/A	N/A	-3.72 in 1/1967	NRCC
October - November 1968	Drought	N/A	N/A	-3.08 in 10/1968	NRCC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts / PDSI Value	Source(s)
February - June - 1969	Drought	N/A	N/A	-3.80 in 6/1969	NRCC
November 1991 - February 1992	Drought	N/A	N/A	-4.19 in 10/1991	NRCC
May - June 1992	Drought	N/A	N/A	-3.54 in 6/1992	NRCC
July – September 1999	Drought	N/A	N/A	55 counties under a drought and water shortage emergency. Governor declared a disaster and transferred \$500,000 to PEMA for drought-related expenses.	PA Office of the Governor

Sources: NRCC 2012; PEMA 2010; PADEP 2012.

Notes:

NRCC Northeast Regional Climate Center

PADEP Pennsylvania Department of Environmental Protection

PEMA Pennsylvania Emergency Management Agency

Table 4.3.2-5 displays the crop loss insurance payments on claims from Westmoreland County caused by drought events since 1948.

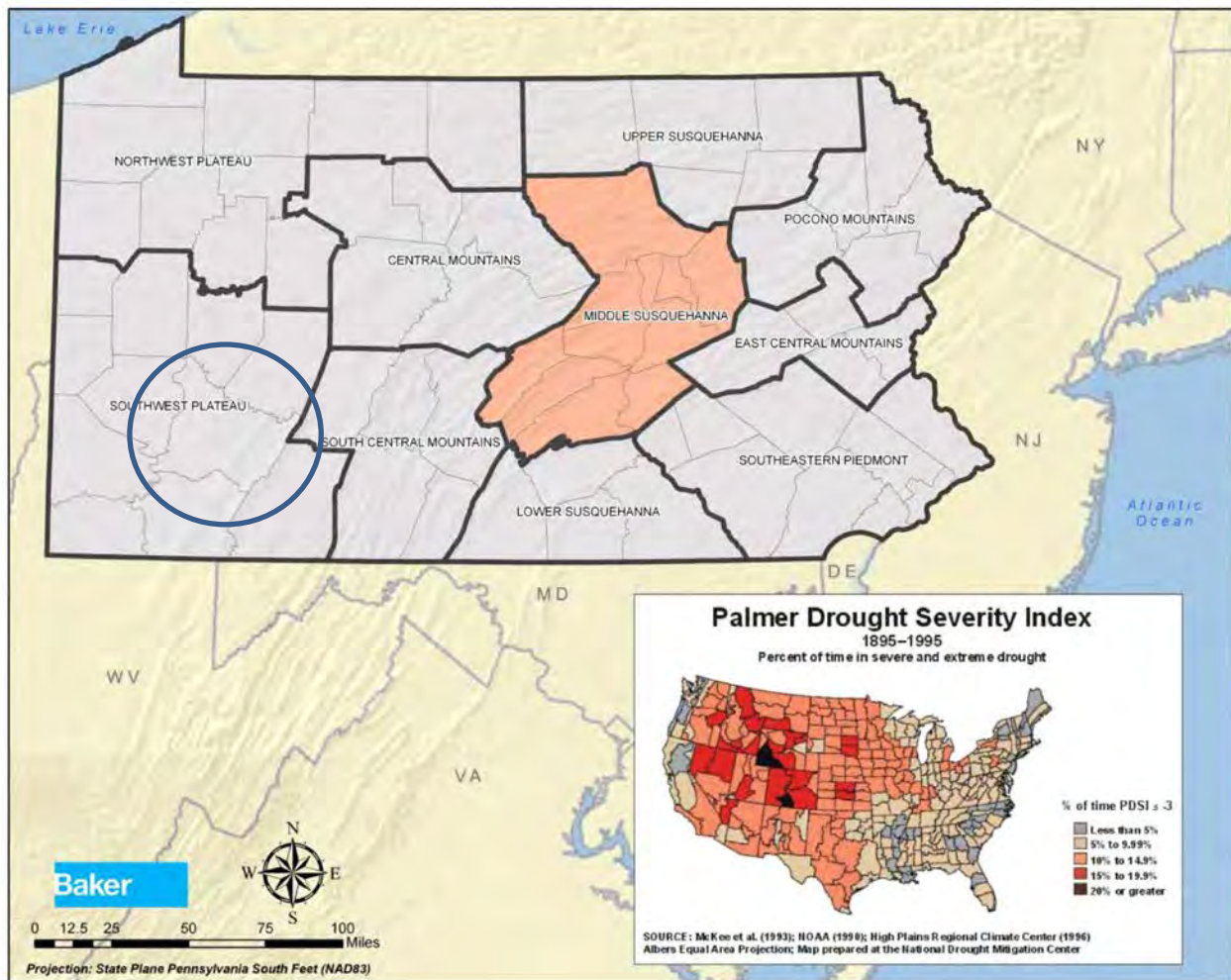
**Table 4.3.2-5. Crop Loss Insurance Claims Due to Drought, 1948 to 2013**

Crop Year	Total Claims	Crop Year	Total Claims
1948 - 1988	\$0	2001	\$4,710
1989	\$33	2002	\$31,945
1990	\$0	2003	\$0
1991	\$0	2004	\$0
1992	\$0	2005	\$66,440
1993	\$0	2006	\$5,773
1994	\$0	2007	\$3,055
1995	\$3,109	2008	\$24,265
1996	\$0	2009	\$4,159
1997	\$0	2010	\$9,537
1998	\$772	2011	\$0
1999	\$99,961	2012	\$114,862
2000	\$0	2013	\$38,168

Source: U.S. Department of Agriculture (USDA) 2013

#### 4.3.2.4 Future Occurrence

The frequency of droughts is difficult to forecast. Based on national annual data from 1895 to 1995, Westmoreland County was in severe or extreme drought conditions less than 5 percent of the time (illustrated on Figure 4.3.2-3). Based on national annual data from 1895 to July 2013, the Southwest Plateau (climate division 9), in which Westmoreland County is located, had an average PDSI of -.52. This climate division has been in severe or extreme drought during approximately 12.7 percent of the 119 years on record (Northeast Regional Climate Center 2013). The future occurrence of drought events is considered likely, as defined by the Risk Factor Methodology probability criteria (described in Section 4.4).

*Figure 4.3.2-2. Palmer Drought Severity Index for Pennsylvania (1895 to 1995)*

Source: PEMA 2013 (highlight added)

#### 4.3.2.5 Vulnerability Assessment

To understand risk, a community must evaluate the assets that are exposed and vulnerable in the identified hazard area. For the drought hazard, all of Westmoreland County has been identified as the hazard area. Therefore, all assets (population, structures, critical facilities, and lifelines) described in the County Profile (Section 2) are vulnerable to a drought. This section evaluates and estimates the potential impact of the drought hazard on Westmoreland County in the following sections:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on life, health, and safety; general building stock and critical facilities; economy; environment; and future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist understanding this hazard over time

#### 4.3.2.5.1 Overview of Vulnerability

Westmoreland County is vulnerable to drought. Assets at particular risk would include any open land or structures located along the wildland/urban interface (WUI) that could become vulnerable to the wildfire hazard caused by extended periods of low rain and high heat, usually associated with drought. In addition, water supply resources could be impacted by extended periods of low rain. Finally, vulnerable populations could be particularly susceptible to the drought hazard and cascading impacts because of age, health conditions, and limited ability to mobilize to shelter, cooling, and medical resources.

#### 4.3.2.5.2 Data and Methodology

At the time of development of this Plan, insufficient data were available to model the long-term potential impacts of a drought on Westmoreland County. Over time, additional data will be collected to allow better analysis for this hazard. Preliminary assessments based on available data are provided below.

#### 4.3.2.5.3 Impact on Life, Health and Safety

Drought conditions can cause a shortage of water available for human consumption and can reduce local firefighting capabilities. Social impacts of a drought include mental and physical stress, public safety threats (increased threat from forest/grass fires), health threats, conflicts between water users, reduced quality of life, and inequities in the distribution of impacts and disaster relief. The infirm, young, and elderly are particularly susceptible to drought and extreme temperatures, sometimes associated with drought conditions, due to their age, health conditions and limited ability to mobilize to shelters, cooling, and medical resources. Impacts on the economy and environment may have social implications as well (New York State Disaster Preparedness Commission [NYS DPC] 2011). For the purposes of this Plan, the entire population of the County is considered vulnerable to drought events.

#### 4.3.2.5.4 Impact on General Building Stock and Critical Facilities

No structures are anticipated to be directly affected by a drought, and all are expected to be operational during a drought event. However, droughts contribute to conditions conducive to wildfires. Risk to life and property is greatest in regions where forested areas adjoin urbanized areas (high-density residential, commercial, and industrial), also known as the WUI. Therefore, all assets in and adjacent to the WUI zone—including population, structures, critical facilities, lifelines, and businesses—are considered vulnerable to wildfire. Section 4.3.12 of this HMP addresses the wildfire hazard in Westmoreland County.

#### 4.3.2.5.5 Impact on the Economy

A prolonged drought can have serious direct and indirect economic impacts on a community or across the County. A summary of impacts on the economy is presented in Table 4.3.2-6.



**Table 4.3.2-6. Impacts on the Economy**

<b>Losses to Agricultural Producers</b>	<b>Losses to Livestock Producers</b>	<b>Loss from Timber Production</b>
Annual and perennial crop losses	Reduced productivity of rangeland	Wildland fires
Damage to crop quality	Reduced milk production	Tree disease
Income loss for farmers due to reduced crop yields	Forced reduction of foundation stock	Insect infestation
Reduced productivity of cropland (wind erosion, long-term loss of organic matter, etc.)	High cost/unavailability of water for livestock	Impaired productivity of forest land
Insect infestation	Cost of new or supplemental water resource development (wells, dams, pipelines)	Direct loss of trees, especially young ones
Plant disease	High cost/unavailability of feed for livestock	<b>Transportation Industry</b>
Wildlife damage to crops	Increased feed transportation costs	Loss from impaired navigability of streams, rivers, and canals
Increased irrigation costs	High livestock mortality rates	<b>Decline in food production/disrupted food supply</b>
Cost of new or supplemental water resource development (wells, dams, pipelines)	Disruption of reproduction cycles (delayed breeding, more miscarriages)	Increase in food prices
<b>Loss from Fishery Production</b>	Decreased stock weights	Increased importation of food (higher costs)
Damage to fish habitat	Increased predation	<b>Water Suppliers</b>
Loss of fish and other aquatic organisms due to decreased flows	Grass fires	Revenue shortfalls and/or windfall profits
<b>Loss to Recreation and Tourism Industry</b>	<b>Energy-related Effects</b>	Cost of water transport or transfer
Loss to manufacturers and sellers of recreational equipment	Increased energy demand and reduced supply because of drought-related power curtailments	Cost of new or supplemental water resource development
Losses related to curtailed activities: hunting and fishing, bird watching, boating, etc.	Costs to energy industry and consumers associated with substituting more expensive fuels (oil) for hydroelectric power	

Source: NYSDPC 2011

Loss estimates are based on lost agricultural revenues Statewide. Table 4.3.2-7 below enumerates the County's farmland acreage exposure to the drought hazard, as well as the annual market value of all agricultural products sold, as documented in the 2007 USDA Census of Agriculture (USDA 2007). If a drought were to eliminate the County's agricultural yield, total losses may amount to nearly \$58.5 million, which would be devastating to the local economy (PEMA 2013).

**Table 4.3.2-7. Estimated County Losses Relating to Agricultural Production**

Impacted Farmland Acreage	Market Value Of All Agricultural Products
167,489	\$58,437,000

Source: PEMA 2013

#### 4.3.2.5.6 Impact on the Environment

As summarized in the PA HMP, environmental impacts of drought include:

- Hydrologic effects – lower water levels in reservoirs, lakes, and ponds; reduced streamflow; loss of wetlands; estuarine impacts; groundwater depletion and land subsidence; effects on water quality such as increases in salt concentration and water temperature
- Damage to animal species – lack of feed and drinking water; disease; loss of biodiversity; migration or concentration; and reduction and degradation of fish and wildlife habitat
- Damage to plant communities – loss of biodiversity; loss of trees from urban landscapes and wooded conservation areas
- Increased number and severity of fires
- Reduced soil quality
- Air quality effects – dust and pollutants
- Loss of quality in landscape through loss in plants and plant diversity
- Increase in nitrate levels, which can have health impacts on pregnant women and children (PEMA 2013)

#### 4.3.2.5.7 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across the County (further discussed in Section 4.4 of this HMP). Any new development and new residents are anticipated to be exposed to the drought hazard.

#### 4.3.2.5.8 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and at the local level, climate change has the potential to alter the prevalence and severity of weather extremes such as droughts. While predicting changes in drought events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society, and the environment (U.S. Environmental Protection Agency [EPA] 2006).

PADEP was directed by the Climate Change Act (Act 70 of 2008) to initiate a study of the potential impacts of global climate change on the Commonwealth. The June 2009 Pennsylvania Climate Impact Assessment's main findings indicate that Pennsylvania is very likely to experience increased temperatures in the 21st century. Increases in temperature will likely lead to increased evapotranspiration, and thus an increase in soil-moisture-related droughts throughout late spring and early fall. Pennsylvania's

precipitation climate is projected to become more extreme in the future, with longer dry periods and greater intensity of precipitation. Most models indicate the maximum number of consecutive dry days in a year, a drought indicator, is projected to increase (Shortle et al. 2009).

Future improvements in modeling smaller-scale climatic processes can be expected and will lead to improved understanding of how the changing climate will alter temperature, precipitation, storm frequency, and intensity in Pennsylvania. Understanding this information can help provide a better indication for future drought events (Shortle et al. 2009).

#### 4.3.2.5.9 Additional Data and Next Steps

For future Plan updates, municipalities' concerns and impacts will be collected and analyzed.

### 4.3.3 Earthquake

An earthquake is the sudden movement of the Earth’s surface caused by the release of stress accumulated within or along the edge of the Earth’s tectonic plates, a volcanic eruption, or by a manmade explosion (Federal Emergency Management Agency [FEMA] 2001; Shedlock and Pakiser 1997). Most earthquakes occur at the boundaries where the Earth’s tectonic plates meet (faults); less than 10 percent of earthquakes occur within plate interiors. As plates continue to move and plate boundaries change geologically over time, weakened boundary regions become part of the interiors of the plates. These zones of weakness within the continents can cause earthquakes in response to stresses that originate at the edges of the plate or in the deeper crust (Shedlock and Pakiser 1997).

According to the U.S. Geological Survey (USGS) Earthquake Hazards Program, an earthquake hazard is any disruption associated with an earthquake that may affect residents’ normal activities. This category includes surface faulting, ground shaking, landslides, liquefaction, tectonic deformation, tsunamis, and seiches; each of these terms is defined below:

- Surface faulting: Displacement that reaches the earth's surface during a slip along a fault. Commonly occurs with shallow earthquakes — those with an epicenter less than 20 kilometers.
- Ground motion (shaking): The movement of the earth's surface from earthquakes or explosions. Ground motion or shaking is produced by waves that are generated by a sudden slip on a fault or sudden pressure at the explosive source and travel through the Earth and along its surface.
- Landslide: A movement of surface material down a slope.
- Liquefaction: A process by which water-saturated sediment temporarily loses strength and acts as a fluid, like the wet sand near the water at the beach. Earthquake shaking can cause this effect.
- Tectonic Deformation: A change in the original shape of a material caused by stress and strain.
- Tsunami: A sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major sub-marine slides, or exploding volcanic islands.
- Seiche: The sloshing of a closed body of water, such as a lake or bay, from earthquake shaking (USGS 2012a).

Ground shaking is the primary cause of earthquake damage to man-made structures. Damage can be increased when soft soils amplify ground shaking. Soils influence damage in different ways. One way is that soft soils amplify the motion of earthquake waves, producing greater ground shaking and increasing the stresses on structures. Another way is that loose, wet, sandy soils may lose strength and flow as a fluid when shaken, causing foundations and underground structures to shift and break (Stanford 2003).

The National Earthquake Hazard Reduction Program (NEHRP) developed five soil classifications defined by their shear-wave velocity that alters the severity of an earthquake. The soil classification system ranges from A to E, as noted in Table 4.3.3-1, where A represents hard rock that reduces ground motions from an earthquake and E represents soft soils that amplify and magnify ground shaking and increase building damage and losses.

**Table 4.3.3-1 NEHRP Soil Classifications**

Soil Classification	Description
A	Hard Rock
B	Rock
C	Very dense soil and soft rock
D	Stiff soils
E	Soft soils

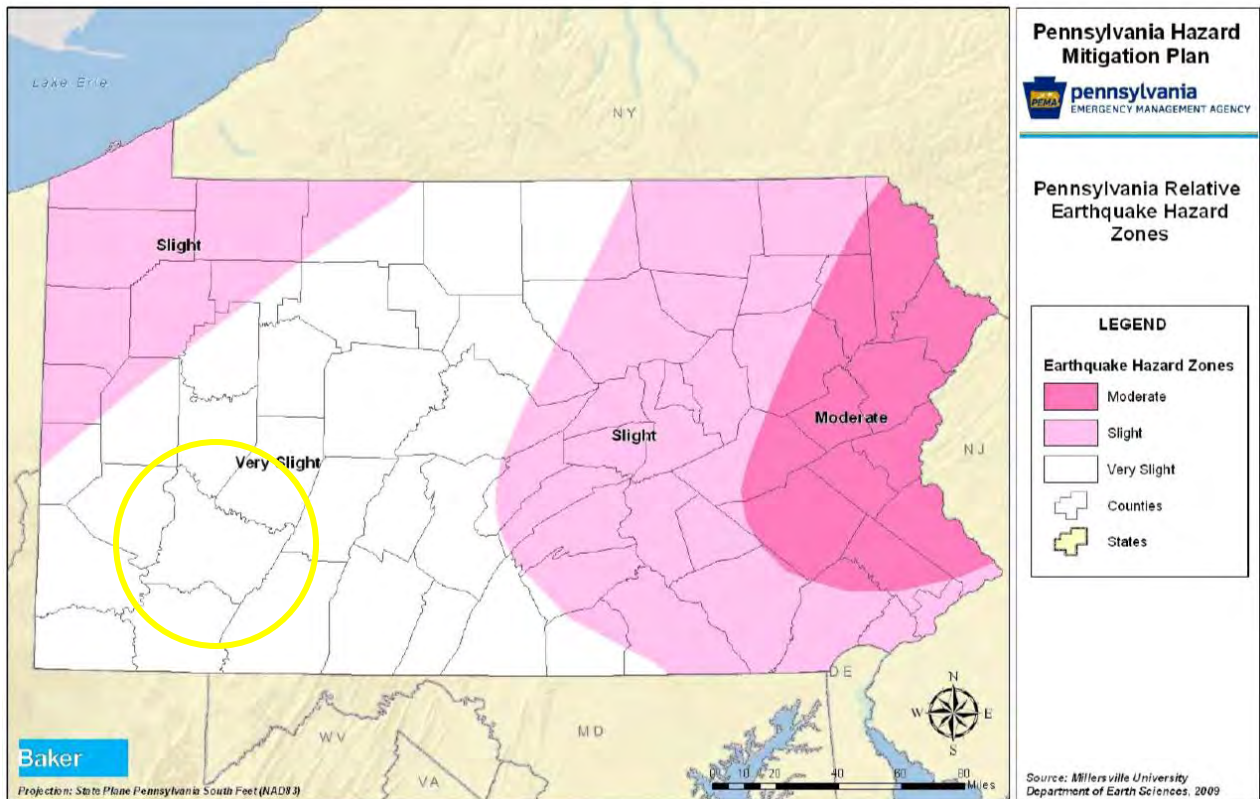
Source: FEMA 2013

#### 4.3.3.1 Location and Extent

The location of an earthquake is commonly described by its focal depth and the geographic position of its epicenter. The focal depth of an earthquake is the depth from the Earth’s surface to the region where an earthquake’s energy originates (the focus or hypocenter). The epicenter of an earthquake is the point on the Earth’s surface directly above the hypocenter. Earthquakes usually occur without warning, and their effects can be felt in areas at great distance from the epicenter.

According to the Pennsylvania Bureau of Topographic and Geologic Survey, when events occur in the Commonwealth, their impact area is very small (less than 100 kilometers [km] in diameter). The most seismically active region in the Commonwealth is in southeastern Pennsylvania in the area of Lancaster County (PEMA 2013). Areas of Pennsylvania, including Westmoreland County, may be subject to the effects of earthquakes with epicenters outside the Commonwealth.

Pennsylvania has three earthquake hazard area zones (very slight, slight, and moderate) as shown in Figure 4.3.3-1 (PEMA 2013). Westmoreland County falls into the “very slight” zone, along with other municipalities and counties located within 100 km from a historical epicenter. Minor earthquake damage is expected in this zone.

**Figure 4.3.3-1: Pennsylvania Earthquake Hazard Zones**

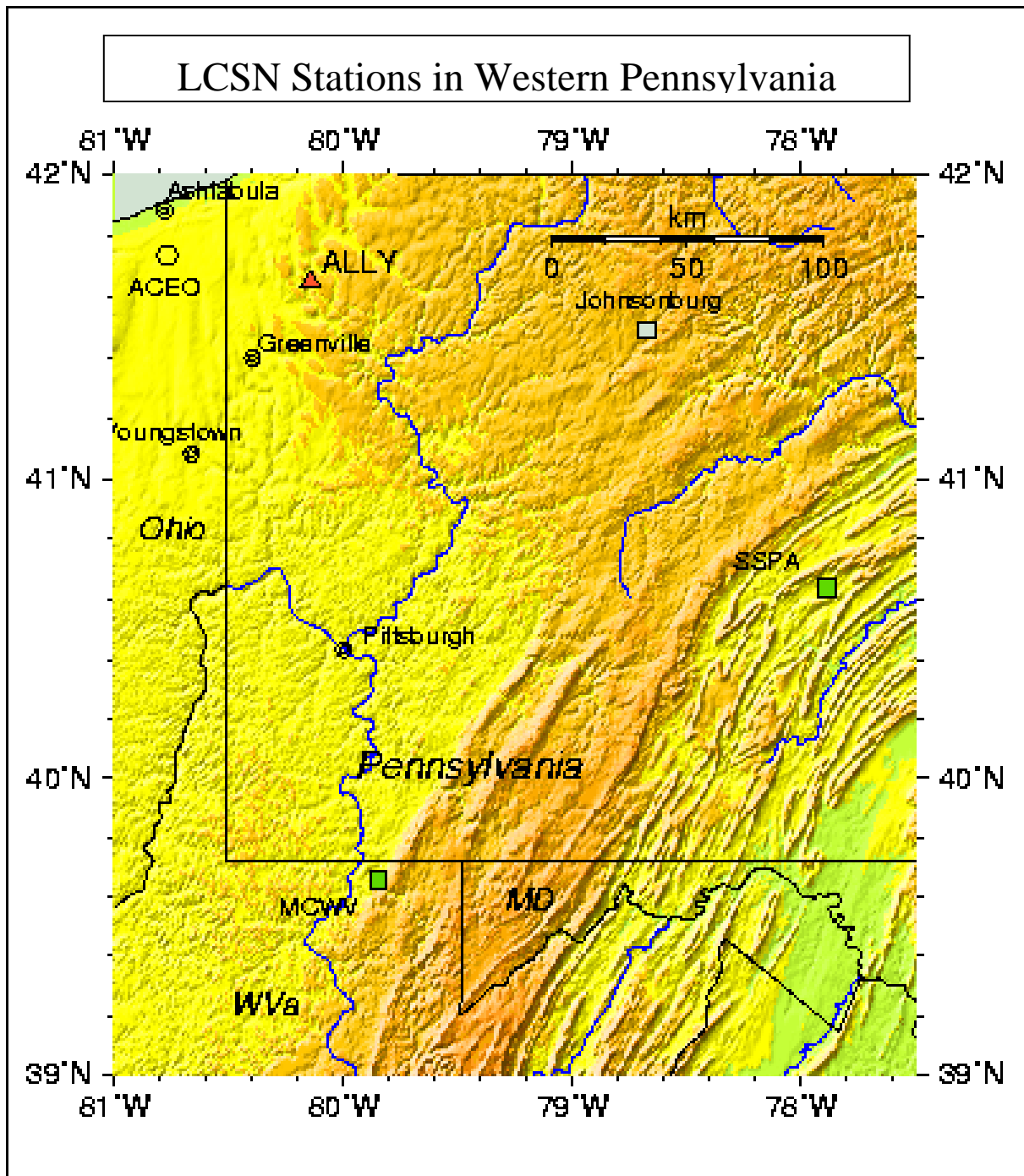
Source: PEMA, 2013

Note: The yellow highlight illustrates the location of Westmoreland County.

The Lamont-Doherty Cooperative Seismographic Network (LCSN) monitors earthquakes that occur primarily in the northeastern United States. The goal of the project is to compile a complete earthquake catalog for this region, to assess the earthquake hazards, and to study the causes of the earthquakes in the region. The LCSN operates 40 seismographic stations in the following seven states: Connecticut, Delaware, Maryland, New Jersey, New York, Pennsylvania, and Vermont. Figure 4.3.3-2 shows the locations of seismographic stations in western Pennsylvania. The network is composed of broadband and short-period seismographic stations (LCSN 2012a).



Figure 4.3.3-2: Lamont-Doherty Seismic Stations Locations in Western Pennsylvania



Source: LCSN, 2006

In addition to the Lamont-Doherty Seismic Stations, the USGS operates a global network of seismic stations to monitor seismic activity. While no seismic stations are located in Westmoreland County, nearby stations are positioned in State College, Pennsylvania. Figure 4.3.3-3 shows its location.

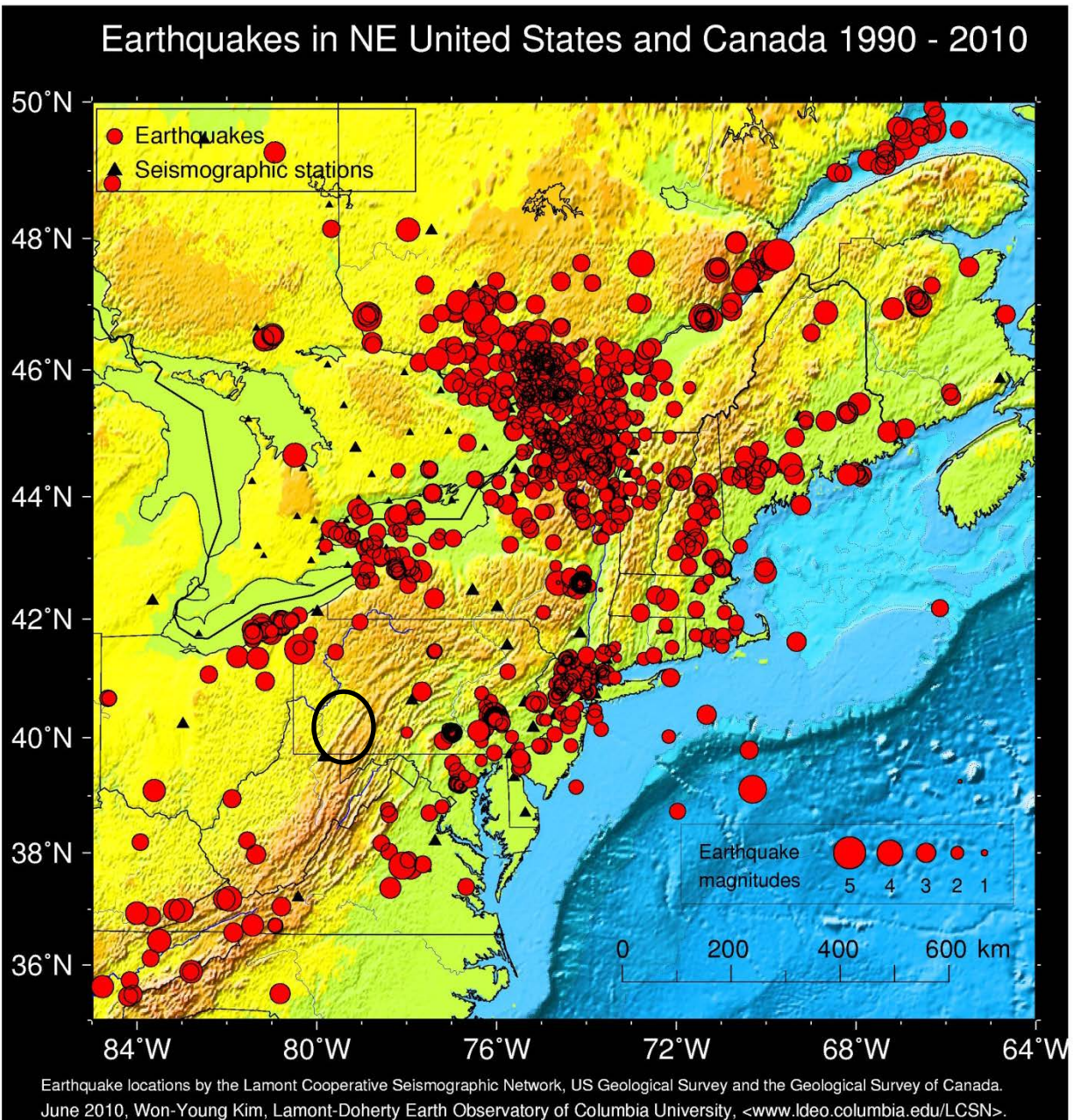
*Figure 4.3.3-3: USGS Seismic Stations in Pennsylvania*

Source: USGS, 2012

Everyday citizens who experience an earthquake can go to the USGS website, *Did You Feel It?* (<http://earthquake.usgs.gov/earthquakes/dyfi/>), to report their experience and share information regarding an earthquake and its effects. The website is intended to gather the everyday citizen's experience during an earthquake, and incorporate the information gathered into detailed maps for shaking intensity and damage assessment.

Earthquakes above a magnitude 5.0 have the potential for causing damage near their epicenters, and larger-magnitude earthquakes have the potential for causing damage over larger, wider areas. Earthquakes in Pennsylvania appear to be centered in the southeastern portion and northwestern corner of the Commonwealth. Figure 4.3.3-4 illustrates earthquake activity in the northeast U.S. from 1990 to 2010, with Westmoreland County circled in black. A discussion of previous occurrences of earthquakes in Westmoreland County is presented in the Previous Occurrences section of this profile.



*Figure 4.3.3-4: Earthquake Epicenters in the Northeast 1990 – 2010*

Source: LCSN 2010

#### 4.3.3.2 Range of Magnitude

Seismic waves are the vibrations from earthquakes that travel through the Earth and are recorded on instruments called seismographs. The magnitude or extent of an earthquake is a measured value of the earthquake size, or amplitude of the seismic waves, using a seismograph. The Richter magnitude scale (Richter scale) was developed in 1932 as a mathematical device to compare the sizes of earthquakes. The Richter scale is the most widely known scale that measures the magnitude of earthquakes. It has no upper limit and is not used to express damage. An earthquake in a densely populated area, which results in many deaths and considerable damage, may have the same magnitude and shock in a remote area that did

not experience any damage. Table 4.3.3-2 shows the Richter scale magnitudes and the earthquake effects for each of the magnitudes. The worst-case earthquake in Westmoreland County would likely result in trees swaying, objects falling off walls, cracked walls, and falling plaster.

**Table 4.3.3-2: Richter Scale Magnitudes**

Richter Magnitude	Earthquake Effects
2.5 or less	Usually not felt, but can be recorded by seismograph
2.5 to 5.4	Often felt, but causes only minor damage
5.5 to 6.0	Slight damage to buildings and other structures
6.1 to 6.9	May cause a lot of damage in very populated areas
7.0 to 7.9	Major earthquake; serious damage
8.0 or greater	Great earthquake; can destroy communities near the epicenter

Source: PEMA, 2013

The intensity of an earthquake is based on the observed effects of ground shaking on people, buildings, and natural features, and varies with location. The Modified Mercalli scale expresses the intensity of an earthquake; the scale is a subjective measure that describes how strong a shock was felt at a particular location. The Modified Mercalli scale expresses the intensity of an earthquake's effects in a given locality in values ranging from I to XII. A detailed description of the MMI Scale is shown in Table 4.3.3-3. The earthquakes that occur in Pennsylvania originate deep within the earth's crust, and not on an active fault. No injury or severe damage from earthquake events has been reported in Westmoreland County.

**Table 4.3.3-3: Modified Mercalli Intensity Scale with Associated Impacts**

Scale	Intensity	Description Of Effects	Corresponding Richter Scale Magnitude
I	Instrumental	Detected only on seismographs	<4.2
II	Feeble	Some people feel it	
III	Slight	Felt by people resting; like a truck rumbling by	
IV	Moderate	Felt by people walking	
V	Slightly Strong	Sleepers awake; church bells ring	<4.8
VI	Strong	Trees sway; suspended objects swing; objects fall off shelves	<5.4
VII	Very Strong	Mild alarm, walls crack, plaster falls	<6.1
VIII	Destructive	Moving cars uncontrollable, masonry fractures, poorly constructed buildings damaged	<6.9
IX	Ruinous	Some houses collapse, ground cracks, pipes break open	
X	Disastrous	Ground cracks profusely, many buildings destroyed, liquefaction and landslides widespread	<7.3
XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes, and cables destroyed; general triggering of other hazards	<8.1
XII	Catastrophic	Total destruction, trees fall, ground rises and falls in waves	>8.1

Source: PEMA 2010

Environmental impacts of earthquakes can be numerous, widespread, and devastating, particularly if indirect impacts are taken into account. Some examples are shown below but are unlikely to occur in Westmoreland County:

- Induced tsunamis and flooding or landslides and avalanches
- Poor water quality
- Damage to vegetation
- Breakage in sewage or toxic material containments
- Secondary impacts, including train derailments and spillage of hazardous materials and utility interruption.

Seismic hazards are often expressed in terms of Peak Ground Acceleration (PGA) and Spectral Acceleration (SA). USGS defines PGA and SA as the following: “PGA is what is experienced by a particle on the ground. Spectral Acceleration (SA) is approximately what is experienced by a building, as modeled by a particle mass on a massless vertical rod having the same natural period of vibration as the building” (USGS 2012). Both PGA and SA can be measured in  $g$  (the acceleration caused by gravity) or expressed as a percent acceleration force of gravity (% $g$ ). PGA and SA hazard maps provide insight into location specific vulnerabilities (NYSDPC 2011).

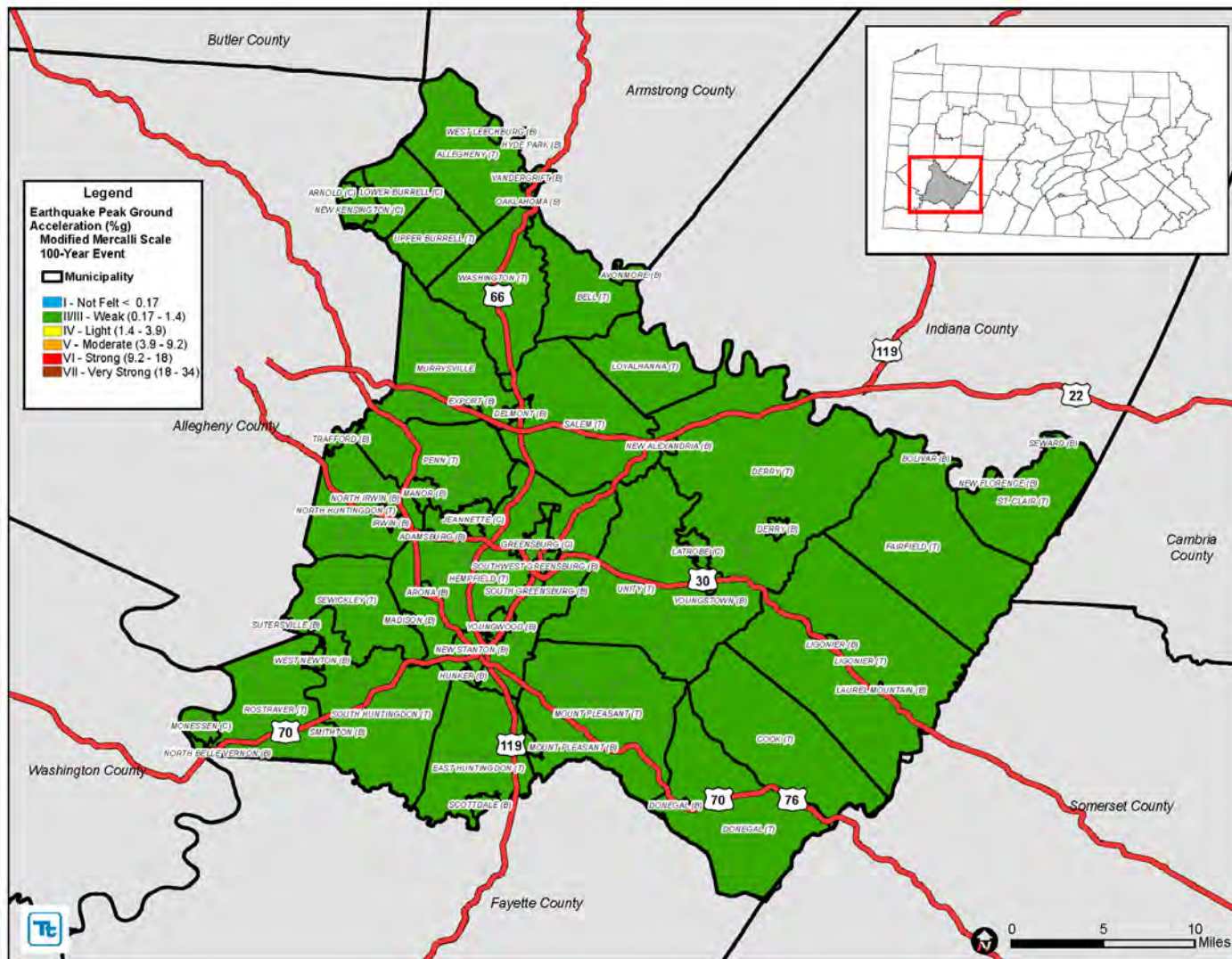
PGA is a common earthquake measurement that shows three things: the geographic area affected, the probability of an earthquake of each given level of severity, and the strength of ground movement (severity) expressed in terms of percent of acceleration force of gravity (% $g$ ). In other words, PGA expresses the severity of an earthquake and is a measure of how hard the earth shakes (or accelerates) in a given geographic area (NYSDPC 2011).

National maps of earthquake shaking hazards have been produced since 1948. They provide information essential to creating and updating the seismic design requirements for building codes, insurance rate structures, earthquake loss studies, retrofit priorities, and land use planning used in the U.S. Scientists frequently revise these maps to reflect new information and knowledge. Buildings, bridges, highways, and utilities built to meet modern seismic design requirements are typically able to withstand earthquakes better, with less damages and disruption. After thorough review of the studies, professional organizations of engineers update the seismic-risk maps and seismic design requirements contained in building codes (Brown and others 2001).

A probabilistic assessment was conducted for the 100-, 500- and 2,500-year mean return periods (MRP) through a Level 1 analysis in HAZUS-MH version 2.1 to analyze the earthquake hazard for Westmoreland County. The HAZUS analysis evaluates the statistical likelihood that a specific event will occur and what consequences will occur. A 100-year MRP event is an earthquake with a 1 percent chance that the mapped ground motion levels (PGA) will be exceeded in any given year. For a 500-year MRP, there is a 0.2 percent chance the mapped PGA will be exceeded in any given year. For a 2,500-year MRP (the worst-case scenario), there is a 0.04 percent chance the mapped PGA will be exceeded in any given year. Figures 4.3.3-2 through 4.3.3-4 illustrate the geographic distribution of PGA (% $g$ ) across Westmoreland County for the 100-, 500- and 2,500-year MRP events. The estimated potential losses estimated by HAZUS-MH for each MRP and the associated PGA are discussed in the ‘Vulnerability Assessment’ subsection below.



Figure 4.3.3-5. Peak Ground Acceleration Modified Mercalli Scale in Westmoreland County for a 100-Year MRP Earthquake Event

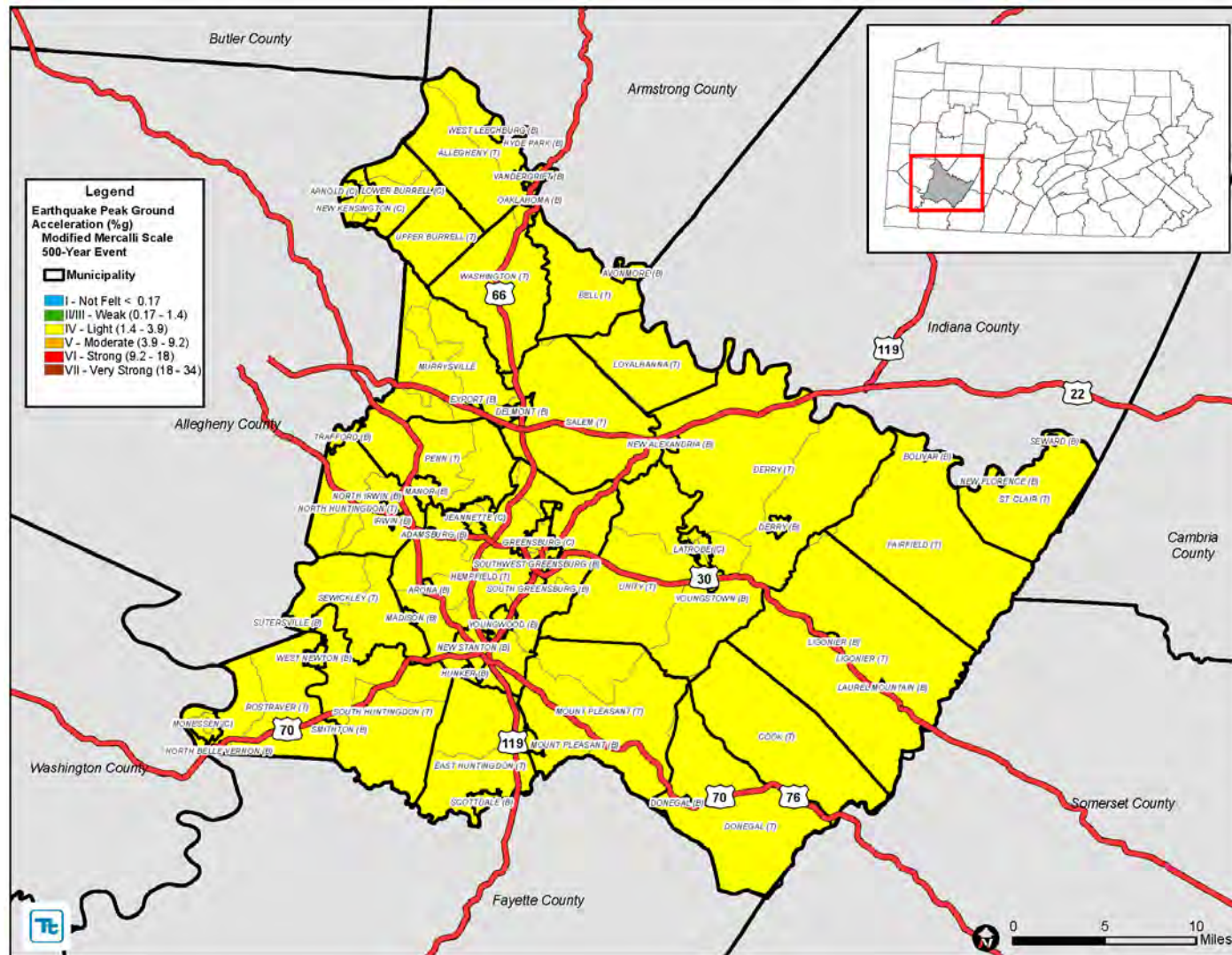


Source: HAZUS-MH 2.1

Note: The peak ground acceleration for the 100-year MRP is 0.17 to 1.4 %g.



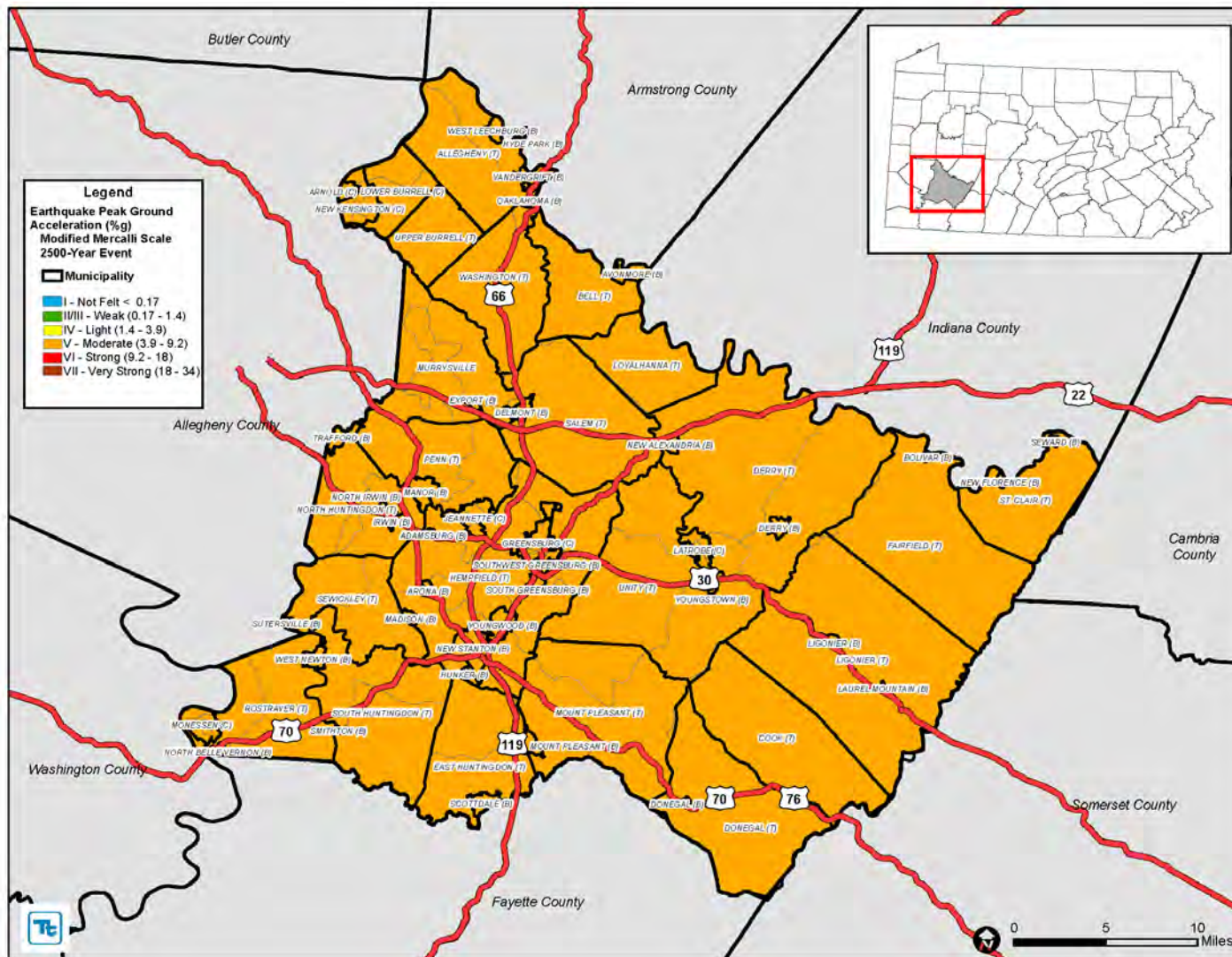
Figure 4.3.3-6. Peak Ground Acceleration Modified Mercalli Scale in Westmoreland County for a 500-Year MRP Earthquake Event



Source: HAZUS-MH 2.1

Note: The peak ground acceleration for the 500-year MRP is 1.4 to 3.9%g.

Figure 4.3.3-7. Peak Ground Acceleration Modified Mercalli Scale in Westmoreland County for a 2,500-Year MRP Earthquake Event



Source: HAZUS 2.1

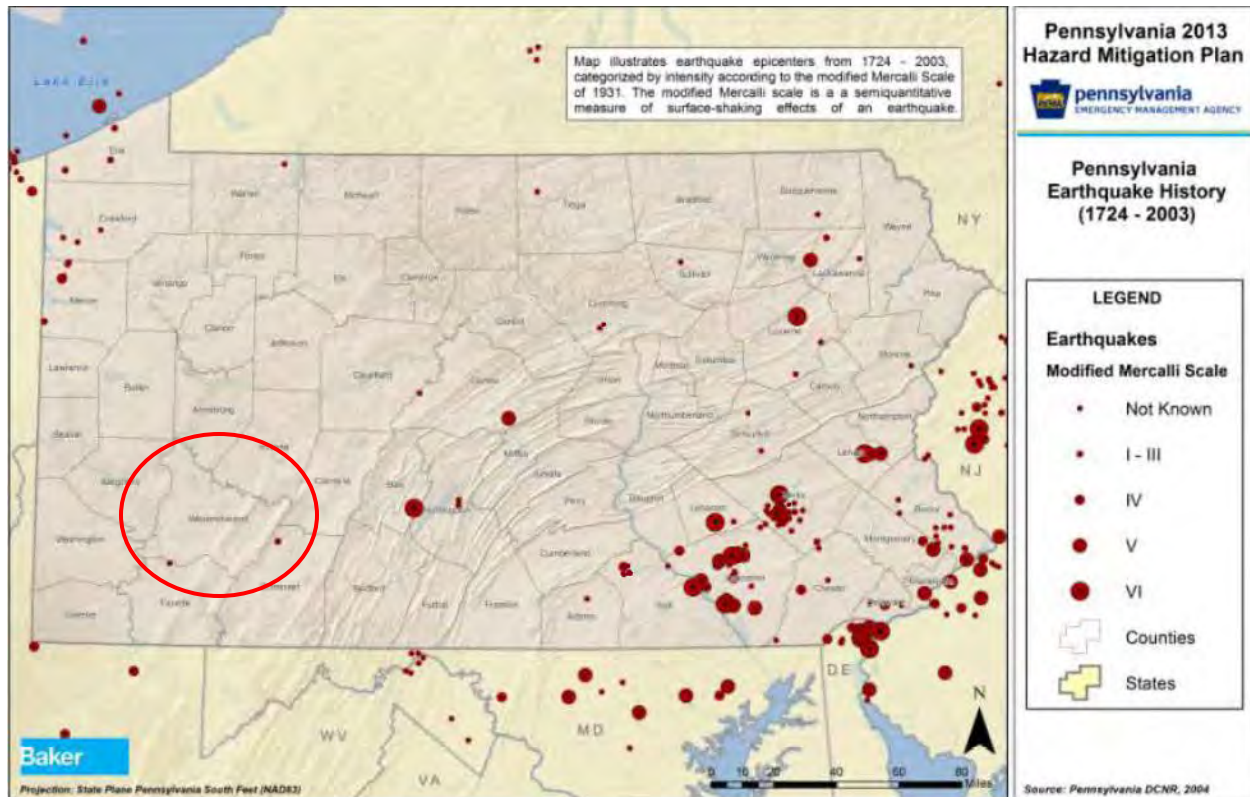
Note: The peak ground acceleration for the 2,500-year MRP is 3.9 to 9.2 %g.



## 4.3.3.3 Past Occurrence

The historical record for earthquakes goes back approximately 200 years. In Pennsylvania, about 48 earthquakes have caused light damage since the Colonial period. Nearly half of these events had out-of-state epicenters (PEMA 2013, USGS 2014). A map of earthquake epicenters in Pennsylvania from 1724 to 2003 is shown in Figure 4.3.3-5, updated with events from 2003 to January 2014. No damages were reported in Westmoreland County.

**Figure 4.3.3-8. Earthquake Epicenters in Pennsylvania**



Source: PEMA 2013

Note: Highlight added and indicates the location of Westmoreland County

The Pennsylvania Department of Conservation and Natural Resources and the Spatial Hazard Events and Losses Database for the United States (SHELDUS) indicated that there have been no recorded earthquake epicenters in Westmoreland County between 1724 and July 31, 2013. However, there were two epicenters in Fayette and Somerset Counties. On October 8, 1965, the epicenter of a 3.3 magnitude earthquake was in Connellsville, Pennsylvania, in Fayette County. On February 3, 1982, a 2.6 earthquake was epicentered in Jennerstown, Pennsylvania, Somerset County (PA DCNR 2007).

Earthquakes whose epicenters fall outside of Pennsylvania can also affect Westmoreland County. Historically, large earthquakes in eastern North America have occurred in three regions: (1) Mississippi Valley near the Town of New Madrid, Missouri; (2) St. Lawrence Valley region of Quebec Canada; and (3) Charleston, South Carolina. In February 1925, one of the region's largest earthquakes on record occurred with its epicenter in a region of Quebec with a magnitude near 7. If a similar magnitude earthquake were to occur in the western part of the Quebec region, some moderate damage might be expected in one or more counties of Pennsylvania's northern tier. An earthquake with an estimated

magnitude of about 7.5 occurred on November 31, 1886, in Charleston, South Carolina. The earthquake was felt in most of Pennsylvania. Since then, an earthquake with a magnitude of 5.8 occurred in Louisa County, Virginia; it was felt throughout Pennsylvania, causing evacuations, minor damage, and emergency infrastructure inspections (PEMA 2013).

Other earthquakes have occurred in East Coast areas, including eastern Massachusetts, southeastern New York, and northern New Jersey. Moderate earthquakes were experienced in southeastern New York and northern New Jersey and were felt in eastern Pennsylvania. If an earthquake of magnitude 6 or greater were to occur in this area, damage would likely result in easternmost counties of Pennsylvania, but not in Westmoreland County.

#### 4.3.3.4 Future Occurrence

An earthquake's severity can be expressed by considering the rate in change of motion of the earth's surface during a seismic event as a percent of the normal rate of acceleration caused by gravity ( $g$ ), which is called the Peak Horizontal Ground Acceleration (PHGA). In general, ground acceleration must exceed 15 percent of  $g$  for significant damage to occur, although soil conditions at local sites are extremely important in controlling how much damage will occur as a consequence of a given amount of ground acceleration. According to PEMA, the highest seismic hazard in the state exists in southeastern Pennsylvania, where PHGA values range from 10 to 14 percent and there is a 90 percent probability that maximum horizontal acceleration in rock of 10-percent of gravity will not be exceeded in a 50-year period (PEMA, 2010).

Based on available historical data, the future occurrence of earthquake events can be considered *unlikely* as defined by the Risk Factor Methodology probability criteria (refer to Section 4.4).

#### 4.3.3.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the identified hazard area. The entire County has been identified as the exposed hazard area for the earthquake hazard. Therefore, all assets in Westmoreland County (population, structures, critical facilities, and lifelines), as described in the County Profile (Section 2), are vulnerable. The following section provides an evaluation and estimation of the potential impact of the earthquake hazard on Westmoreland County, including the following:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on: (1) life, safety and health of residents, (2) general building stock, (3) critical facilities, (4) economy, and (5) future growth and development
- Further data collections that will assist understanding of this hazard over time.

##### 4.3.3.5.1 Overview of Vulnerability

Earthquakes usually occur without warning and can be felt in areas a great distance from their point of origin. The extent of damage depends on the density of the population and building and infrastructure construction in the area shaken by the quake. Some areas may be more vulnerable than others based on soil type, the age of the buildings, and building codes in place. Compounding the potential for damage – historically, Building Officials Code Administration (BOCA) used in the Northeast were developed to address local concerns including heavy snow loads and wind; seismic requirements for design criteria are not as stringent compared with the West Coast's reliance on the more seismically focused Uniform

Building Code. As such, a smaller earthquake in the Northeast can cause more structural damage than if it occurred out west.

The entire population and general building stock inventory of the County are at risk of being damaged or experiencing losses as a result of impacts of an earthquake. Potential losses associated with earth shaking were calculated for Westmoreland County for three probabilistic earthquake events, the 100-, 500-, and 2,500-year MRP. The impacts on population, existing structures, critical facilities, and the economy within Westmoreland County are presented below, following a summary of the data and methodology used.

#### 4.3.3.5.2 Data and Methodology

A probabilistic assessment was conducted for the 100-, 500-, and 2,500-year MRPs in HAZUS-MH 2.1 to analyze the earthquake hazard and provide a range of loss estimates for Westmoreland County. The probabilistic method uses information from historical earthquakes and inferred faults, locations, and magnitudes, and computes the probable ground shaking levels that may be experienced during a recurrence period by Census tract. According to the New York City Area Consortium for Earthquake Loss Mitigation (NYCEM), probabilistic estimates are best for urban planning, land use, zoning, and seismic building code regulations (NYCEM 2003). The default assumption is a magnitude 7 earthquake for all return periods. In addition, an annualized loss run was also conducted in HAZUS-MH 2.1 to estimate the annualized general building stock dollar losses for Westmoreland County.

In addition to the probabilistic scenarios mentioned, an annualized loss run was conducted in HAZUS 2.1 to estimate the annualized general building stock dollar losses for the County. The annualized loss methodology combines the estimated losses associated with ground shaking for eight return periods: 100, 250, 500, 750, 1,000, 1,500, 2,000, 2,500 year, which are based on values from the USGS seismic probabilistic curves. Annualized losses are useful for mitigation planning because they provide a baseline that can be used to compare (1) the risk of one hazard across multiple jurisdictions, and (2) the degree of risk of all hazards for each participating jurisdiction.

As noted in the HAZUS-MH Earthquake User Manual “*Uncertainties are inherent in any loss estimation methodology. They arise in part from incomplete scientific knowledge concerning earthquakes and their effects upon buildings and facilities. They also result from the approximations and simplifications that are necessary for comprehensive analyses. Incomplete or inaccurate inventories of the built environment, demographics and economic parameters add to the uncertainty. These factors can result in a range of uncertainly in loss estimates produced by the HAZUS Earthquake Model, possibly at best a factor of two or more.*” However, HAZUS potential loss estimates are acceptable for the purposes of this HMP.

The occupancy classes available in HAZUS-MH 2.1 were condensed into the following categories (residential, commercial, industrial, agricultural, religious, government, and educational) to facilitate the analysis and the presentation of results. Residential loss estimates address both multi-family and single family dwellings. Impacts to critical facilities and utilities were also evaluated.

Data used to assess this hazard include data available in the HAZUS-MH 2.1 earthquake model, professional knowledge, and information provided by the County’s Planning Committee.

#### 4.3.3.5.3 Impact on Life, Health, and Safety

Overall, the entire population of Westmoreland County is exposed to the earthquake hazard event. According to the 2010 U.S. Census, Westmoreland County had a population of 365,169 people. The impact of earthquakes on life, health, and safety depends on the severity of the event. Risk to public

safety and loss of life from an earthquake in Westmoreland County are minimal, with higher risk occurring in buildings as a result of damage to the structure, or people walking below building ornamentation and chimneys that may be shaken loose and fall as a result of the quake.

Populations considered most vulnerable are located in the built environment, particularly near unreinforced masonry construction. In addition, the vulnerable population includes the elderly (persons over the age of 65) and individuals living below the Census poverty threshold. These socially vulnerable populations are most susceptible, based on a number of factors including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing.

Residents may be displaced or require temporary to long-term sheltering as a result of the event. The number of people requiring shelter is generally less than the number displaced, as some displaced persons use hotels or stay with family or friends after a disaster event. Table 4.3.3-2 summarizes the households HAZUS-MH 2.1 estimates will be displaced and population that may require short-term sheltering as a result of the 100-, 500-, and 2,500-year MRP earthquake events. Table 4.3.3-3 shows this information by municipality. The 100-year MRP earthquake is excluded from Table 4.3.3-3 because the 100-year MRP earthquake does not displace any households.

**Table 4.3.3-4. Summary of Estimated Sheltering Needs for Westmoreland County**

Scenario	Displaced Households	Persons Seeking Short-Term Shelter
100-Year Earthquake	0	0
500-Year Earthquake	3	1
2,500-Year Earthquake	115	74

Source: HAZUS-MH 2.1

**Table 4.3.3-5. Estimated Displaced Households and Population Seeking Short-Term Shelter from the 500- and 2,500-year MRP Events per Municipality**

Municipality	500-Year MRP Event		2,500-Year MRP Event	
	Displaced Households	Persons Seeking Short-Term Sheltering	Displaced Households	Persons Seeking Short-Term Sheltering
Allegheny-Vandergrift	0	0	1	1
Arnold	0	0	3	2
Derry Borough	0	0	1	1
Derry Township	0	0	2	1
Derry Township-New Alexandria	0	0	2	1
Donegal-Cook	0	0	1	1
East Huntingdon	0	0	2	1
Fairfield-St. Clair-Seward-New Florence-Bolivar	0	0	1	1
Greensburg	1	1	10	6
Hempfield Township	1	0	10	6
Hempfield-Adamsburg	0	0	0	0



## SECTION 4.3.3: RISK ASSESSMENT – EARTHQUAKE

Municipality	500-Year MRP Event		2,500-Year MRP Event	
	Displaced Households	Persons Seeking Short-Term Sheltering	Displaced Households	Persons Seeking Short-Term Sheltering
Hempfield-Arona	0	0	2	1
Jeannette	0	0	3	2
Jeannette-Penn	0	0	2	1
Latrobe	0	0	4	3
Ligonier Borough	0	0	1	1
Ligonier Township-Laurel Mountain Borough	0	0	1	1
Lower Burrell	0	0	4	2
Loyalhanna-Bell-Avonmore-Oklahoma	0	0	1	1
Monessen	0	0	3	2
Mount Pleasant Borough	0	0	2	1
Mount Pleasant Township	0	0	3	2
Murrysville	0	0	3	2
Murrysville-Belmont-Export	0	0	2	1
New Kensington	1	0	8	5
North Belle Vernon Borough	0	0	1	0
North Huntingdon Township	0	0	6	4
North Huntingdon-Manor	0	0	1	1
North Irwin - Irwin	0	0	4	2
Penn Township	0	0	3	2
Rostraver Township	0	0	3	2
Salem Township	0	0	2	1
Scottdale Borough	0	0	2	1
Sewickley Township	0	0	1	1
Sewickley-Sutersville	0	0	1	1
South Greensburg	0	0	1	1
South Huntingdon Township	0	0	1	0
South Huntingdon-Smithton	0	0	1	0
Southwest Greensburg	0	0	1	1
Trafford Borough	0	0	2	1
Unity Township	0	0	4	3
Unity-Youngstown	0	0	1	1
Upper Burrell Township	0	0	0	0
Vandergrift Borough	0	0	2	1

Municipality	500-Year MRP Event		2,500-Year MRP Event	
	Displaced Households	Persons Seeking Short-Term Sheltering	Displaced Households	Persons Seeking Short-Term Sheltering
Vandergrift-East Vandergrift	0	0	1	1
Washington Township	0	0	1	1
West Leechburg-Hyde Park-Allegheny	0	0	1	1
West Newton Borough	0	0	1	1
Youngwood Borough	0	0	2	1
<b>Westmoreland County (Total)</b>	<b>3</b>	<b>1</b>	<b>115</b>	<b>74</b>

Source: HAZUS-MH 2.1

Note: The population displaced and seeking shelter was calculated using the 2000 U.S. Census data (HAZUS-MH 2.1 default demographic data).

According to the 1999-2003 NYCEM Summary Report (*Earthquake Risks and Mitigation in the New York / New Jersey / Connecticut Region*), there is a strong correlation between structural building damage and the number of injuries and casualties from an earthquake event. Furthermore, the time of day also exposes different sectors of the community to the hazard. For example, HAZUS considers the residential occupancy at its maximum at 2:00 a.m., where the educational, commercial and industrial sectors are at their maximum at 2:00 p.m., and peak commute time is at 5:00 p.m. Whether affected directly or indirectly, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of functions of utilities could affect populations that suffered no direct damage from an event itself.

There are 0 injuries or casualties estimated for the 100-year event. An estimated 10 injuries that require medical attention (no hospitalization), and one injury that requires hospitalization are calculated for the 500-year event. There are no casualties estimated for the 500-year event.

Table 4.3.3-4 summarizes the injuries and casualties estimated for the 2,500-year MRP earthquake event.

**Table 4.3.3-6. Estimated Number of Injuries and Casualties from the 2,500-Year MRP Earthquake Event**

Level of Severity	Time of Day		
	2:00 AM	2:00 PM	5:00 PM
Injuries	81	48	50
Hospitalization	12	8	8
Casualties	2	1	1

Source: HAZUS-MH 2.1

#### 4.3.3.5.4 Impact on General Building Stock

After the population exposed to the earthquake hazard has been considered, the value of general building stock exposed to and damaged by 100-, 500-, and 2,500-year MRP earthquake events was evaluated. In

addition, annualized losses were calculated using HAZUS-MH 2.1. The entire study area’s general building stock is considered at risk and exposed to this hazard.

The HAZUS-MH 2.1 model estimates the value of the exposed building stock and the loss (in terms of damage to the exposed stock). Refer to the County Profile (Section 2) for statistics on the replacement value for general building stock data (structure and contents).

A probabilistic model was run for this plan to estimate annualized dollar losses for Westmoreland County for this plan update and using HAZUS-MH 2.1. Annualized losses are useful for mitigation planning because they provide a baseline that can be used to compare (1) the risk of one hazard across multiple jurisdictions, and (2) the degree of risk of all hazards for each participating jurisdiction. Please note that annualized loss does not predict what losses will occur in any particular year. The estimated annualized losses are approximately \$176,000 per year (building and contents) for the County.

According to NYCEM, where earthquake risks and mitigation were evaluated in the New York, New Jersey, and Connecticut region, most damage and loss caused by an earthquake are directly or indirectly the result of ground shaking (NYCEM 2003). NYCEM indicates there is a strong correlation between PGA and the damage a building might experience. The HAZUS-MH model is based on the best available earthquake science and aligns with these statements. HAZUS-MH 2.1 methodology and model were used to analyze the earthquake hazard for the general building stock for Westmoreland County. See Figures 4.3.3-2 through 4.3.3-4 earlier in this profile that illustrate the geographic distribution of PGA (g) across the County for 100-, 500-, and 2,500-year MRP events.

In addition, according to NYCEM, a building’s construction determines how well it can withstand the force of an earthquake. The NYCEM report indicates that un-reinforced masonry buildings are most at risk during an earthquake because the walls are prone to collapse outward, whereas steel and wood buildings absorb more of the earthquake’s energy. Additional attributes that contribute to a building’s capability to withstand an earthquake’s force include its age, number of stories, and quality of construction. HAZUS-MH considers building construction and the age of buildings as part of the analysis. The default building ages and building types already incorporated into the inventory were used because the default general building stock was used for this HAZUS-MH analysis.

Potential building damage was evaluated by HAZUS-MH 2.1 across the following damage categories: none, slight, moderate, extensive, and complete. Table 4.3.3-5 provides definitions of these five categories of damage for a light wood-framed building; definitions for other building types are included in the HAZUS-MH technical manual documentation. General building stock damage for these damage categories by occupancy class and building type on a County-wide basis is summarized for the 100-, 500-, and 2,500-year events in Table 4.3.3-6, Table 4.3.3-7, and Table 4.3.3-8.

**Table 4.3.3-7. Example of Structural Damage State Definitions for a Light Wood-Framed Building**

Damage Category	Description
Slight	Small plaster or gypsum-board cracks at corners of door and window openings and wall-ceiling intersections; small cracks in masonry chimneys and masonry veneer.
Moderate	Large plaster or gypsum-board cracks at corners of door and window openings; small diagonal cracks across shear wall panels exhibited by small cracks in stucco and gypsum wall panels; large cracks in brick chimneys; toppling of tall masonry chimneys.
Extensive	Large diagonal cracks across shear wall panels or large cracks at plywood joints; permanent lateral movement of floors and roof; toppling of most brick chimneys; cracks in foundations;

Damage Category	Description
	splitting of wood sill plates or slippage of structure over foundations; partial collapse of room-over-garage or other soft-story configurations.
Complete	Structure may have large permanent lateral displacement, may collapse, or be in imminent danger of collapse because of the cripple wall failure or the failure of the lateral load resisting system; some structures may slip and fall off the foundations; large foundation cracks.

Source: HAZUS-MH Technical Manual

HAZUS-MH 2.1 estimates a negligible amount of damage to Westmoreland County’s general building stock as a result of a 100-year MRP event. Table 4.3.3-6 through Table 4.3.3-8 summarizes the damage estimated for the 100-, 500-, and 2,500-year MRP earthquake events. Damage loss estimates include structural and non-structural damage to the building and loss of contents.

**Table 4.3.3-8. Estimated Buildings Damaged by General Occupancy for 100-year, 500-year, and 2,500-year MRP Earthquake Events**

Category	Average Damage State														
	100-Year MRP					500-Year MRP					2,500-Year MRP				
	None	Slight	Moderate	Extensive	Complete	None	Slight	Moderate	Extensive	Complete	None	Slight	Moderate	Extensive	Complete
Residential	100%	0%	0%	0%	0%	98.2%	1.4%	0.4%	0.0%	0.0%	89.8%	7.3%	2.5%	0.3%	0.0%
Commercial	100%	0%	0%	0%	0%	98.3%	1.3%	0.4%	0.0%	0.0%	89.9%	6.9%	2.8%	0.4%	0.0%
Industrial	100%	0%	0%	0%	0%	98.4%	1.2%	0.3%	0.0%	0.0%	90.3%	6.6%	2.7%	0.4%	0.0%
Education, Government, Religious and Agricultural	100%	0%	0%	0%	0%	98.4%	1.3%	0.4%	0.0%	0.0%	90.3%	6.7%	2.6%	0.4%	0.0%

Source: HAZUS-MH 2.1

**Table 4.3.3-9. Estimated Number of Buildings Damaged by Building Type for 100-year, 500-year, and 2,500-year MRP Earthquake Events**

Category	Average Damage State														
	100-Year MRP					500-Year MRP					2,500-Year MRP				
	None	Slight	Moderate	Extensive	Complete	None	Slight	Moderate	Extensive	Complete	None	Slight	Moderate	Extensive	Complete
Wood	100%	0%	0%	0%	0%	99.3%	0.7%	0.1%	0.0%	0.0%	93.6%	5.4%	0.9%	0.0%	0.0%
Steel	100%	0%	0%	0%	0%	98.8%	1.0%	0.2%	0.0%	0.0%	91.1%	6.1%	2.5%	0.3%	0.0%
Concrete	100%	0%	0%	0%	0%	99.0%	0.8%	0.2%	0.0%	0.0%	92.0%	5.7%	2.2%	0.1%	0.0%
Reinforced Masonry	100%	0%	0%	0%	0%	98.6%	1.0%	0.4%	0.0%	0.0%	92.1%	4.7%	2.8%	0.4%	0.0%
Un-reinforced Masonry	100%	0%	0%	0%	0%	96.4%	2.6%	0.9%	0.1%	0.0%	84.0%	10.0%	4.9%	1.0%	0.1%
Manufactured housing	100%	0%	0%	0%	0%	96.3%	2.9%	0.8%	0.0%	0.0%	82.3%	11.8%	5.8%	0.2%	0.0%

Source: HAZUS-MH 2.1



**Table 4.3.3-10. Estimated Building Value (Building and Contents) Damaged by the 500- and 2,500-Year MRP Earthquake Events**

Municipality	Estimated Total Damages*			Percent of Total Building and Contents RV**		Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	500-Year	2,500-Year	500-Year	2,500-Year	500-Year	2,500-Year	500-Year	2,500-Year
Allegheny-Vandergrift	2,276	162,407	1,628,398	0.00%	0.29%	139,260	1,351,879	17,141	180,215
Arnold	2,490	162,891	1,813,168	0.00%	0.27%	127,988	1,314,930	14,235	149,552
Derry Borough	937	62,009	662,551	0.00%	0.26%	51,177	523,726	5,042	54,155
Derry Township	3,279	216,785	2,316,055	0.00%	0.27%	177,031	1,764,991	17,551	186,577
Derry Township-New Alexandria	2,297	150,760	1,547,254	0.00%	0.27%	127,093	1,250,714	14,137	154,875
Donegal-Cook	1,995	132,733	1,343,789	0.00%	0.28%	116,868	1,144,758	9,986	111,023
East Huntingdon	3,063	204,289	2,032,537	0.00%	0.26%	152,092	1,400,356	33,228	330,082
Fairfield-St. Clair-Seward-New Florence-Bolivar	1,881	127,275	1,292,875	0.00%	0.27%	111,029	1,096,389	8,812	94,620
Greensburg	10,446	556,417	6,128,477	0.00%	0.23%	363,008	3,859,317	150,170	1,637,165
Hempfield Township	14,863	970,102	9,894,415	0.00%	0.26%	799,581	7,918,807	125,259	1,316,364
Hempfield-Adamsburg	715	50,721	484,865	0.00%	0.27%	42,691	396,354	6,285	63,297
Hempfield-Arona	3,512	269,160	2,597,413	0.00%	0.27%	240,472	2,228,364	15,006	151,932
Jeannette	3,872	245,890	2,498,521	0.00%	0.25%	187,027	1,774,307	34,173	362,224
Jeannette-Penn	1,422	85,013	889,841	0.00%	0.24%	55,782	545,661	18,976	193,502
Latrobe	4,970	291,187	3,357,249	0.00%	0.24%	196,324	2,022,137	50,013	529,464
Ligonier Borough	1,195	61,861	680,191	0.00%	0.23%	35,101	364,551	17,784	192,380
Ligonier Township-Laurel Mountain Borough	4,697	278,968	2,907,641	0.00%	0.24%	207,293	2,053,205	61,455	703,920

## SECTION 4.3.3: RISK ASSESSMENT – EARTHQUAKE

Municipality	Estimated Total Damages*			Percent of Total Building and Contents RV**		Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	500-Year	2,500-Year	500-Year	2,500-Year	500-Year	2,500-Year	500-Year	2,500-Year
Lower Burrell	6,045	395,399	4,093,869	0.00%	0.27%	315,910	3,128,961	53,018	565,452
Loyalhanna-Bell-Avonmore-Oklahoma	2,474	175,266	1,779,001	0.00%	0.26%	144,138	1,326,481	10,053	102,505
Monessen	3,522	242,531	2,387,052	0.00%	0.26%	195,850	1,862,257	30,966	312,408
Mount Pleasant Borough	3,865	221,082	2,417,171	0.00%	0.23%	111,400	1,084,656	74,873	752,601
Mount Pleasant Township	5,066	320,153	3,413,600	0.00%	0.25%	232,754	2,303,480	58,215	620,185
Murrysville	8,591	595,323	5,868,894	0.00%	0.26%	470,329	4,448,287	96,019	985,913
Murrysville-Belmont-Export	3,943	261,329	2,631,514	0.00%	0.25%	193,966	1,830,549	43,330	435,010
New Kensington	7,991	483,491	5,189,473	0.00%	0.25%	351,367	3,563,321	90,690	983,416
North Belle Vernon Borough	1,046	65,504	635,278	0.00%	0.25%	47,060	446,559	15,659	154,100
North Huntingdon Township	11,979	828,687	8,103,110	0.00%	0.26%	667,065	6,250,794	113,174	1,134,938
North Huntingdon-Manor	2,369	172,589	1,730,033	0.00%	0.26%	143,780	1,348,776	14,863	149,953
North Irwin - Irwin	2,380	154,833	1,579,433	0.00%	0.25%	120,073	1,179,633	21,211	217,988
Penn Township	8,578	614,341	6,190,705	0.00%	0.27%	511,442	4,791,023	47,031	485,809
Rostraver Township	4,886	314,446	3,021,015	0.00%	0.26%	240,930	2,212,651	55,579	572,530
Salem Township	4,965	257,386	2,810,999	0.00%	0.24%	146,351	1,434,546	76,968	826,332
Scottdale Borough	2,640	176,539	1,904,149	0.00%	0.25%	124,678	1,186,846	19,850	197,295
Sewickley Township	1,384	93,444	935,181	0.00%	0.26%	75,522	704,170	7,665	75,427



SECTION 4.3.3: RISK ASSESSMENT – EARTHQUAKE

Municipality	Estimated Total Damages*			Percent of Total Building and Contents RV**		Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	500-Year	2,500-Year	500-Year	2,500-Year	500-Year	2,500-Year	500-Year	2,500-Year
Sewickley-Sutersville	868	61,225	591,510	0.00%	0.27%	50,783	471,100	5,972	60,225
South Greensburg	1,467	82,988	877,952	0.00%	0.24%	51,879	527,087	25,314	264,289
South Huntingdon Township	1,424	98,957	957,548	0.00%	0.26%	78,950	724,697	13,353	133,510
South Huntingdon-Smithton	1,163	83,532	819,770	0.00%	0.26%	65,516	600,668	12,213	120,594
Southwest Greensburg	1,144	75,291	785,185	0.00%	0.26%	60,729	624,002	11,916	124,168
Trafford Borough	2,117	132,467	1,310,426	0.00%	0.23%	78,933	754,539	46,460	458,333
Unity Township	8,517	531,793	5,774,126	0.00%	0.26%	411,859	4,174,576	65,285	703,962
Unity-Youngstown	1,710	119,290	1,217,245	0.00%	0.27%	105,757	1,054,813	9,613	104,383
Upper Burrell Township	1,100	74,170	802,700	0.00%	0.27%	52,589	504,705	9,407	97,977
Vandergrift Borough	1,381	88,053	905,748	0.00%	0.26%	71,106	715,425	13,368	141,685
Vandergrift-East Vandergrift	1,037	70,598	725,212	0.00%	0.27%	58,396	581,316	6,213	65,640
Washington Township	2,666	198,843	1,943,826	0.00%	0.29%	180,777	1,713,961	11,217	114,862
West Leechburg-Hyde Park-Allegheny	2,221	135,845	1,481,296	0.00%	0.26%	95,372	943,912	24,926	265,894
West Newton Borough	1,225	80,554	811,021	0.00%	0.25%	62,276	597,423	10,695	107,840
Youngwood Borough	2,046	120,952	1,308,611	0.00%	0.24%	74,808	736,925	19,605	197,682
<b>Westmoreland County (Total)</b>	<b>175,718</b>	<b>11,355,360</b>	<b>117,077,893</b>	<b>0.00%</b>	<b>0.26%</b>	<b>8,722,162</b>	<b>84,838,583</b>	<b>1,713,969</b>	<b>17,944,249</b>

Source: HAZUS-MH 2.1

RV: Replacement Value

\*Total is sum of damages for all occupancy classes (residential, commercial, industrial, agricultural, educational, religious, and government).

\*\*Total replacement value (building and contents) for the County is greater than \$45 billion.



It is estimated that there would be nearly \$11 million in damages to buildings in the County during a 500-year earthquake event. This amount includes structural damage, non-structural damage, and loss of contents, representing less than one-percent of the total replacement value for general building stock in Westmoreland County. HAZUS-MH estimates 4,439 buildings will be at least moderately damaged for a 2,500-year MRP earthquake event. The estimated total building damage is greater than \$117 million, less than 1 percent of the total general building stock replacement value. (Total replacement value is greater than \$45 billion for the County.) Residential and commercial buildings account for most of the damage for earthquake events. Earthquakes can cause secondary hazard events such as fires. No fires are anticipated as a result of the 100-, 500-, or 2,500-year MRP events.

#### 4.3.3.5.5 Impact on Critical Facilities

After the general building stock exposed to, and damaged by, 100-, 500-, and 2,500-year MRP earthquake events had been considered, critical facilities were evaluated. All critical facilities (essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities, and user-defined facilities) in Westmoreland County are considered exposed and vulnerable to the earthquake hazard. Refer to subsection Critical Facilities in Section 2 (County Profile) of this plan for a complete inventory of critical facilities in the County.

HAZUS-MH 2.1 estimates the probability that critical facilities may sustain damage as a result of 100-, 500-, and 2,500-year MRP earthquake events. Additionally, HAZUS-MH estimates percent functionality for each facility days after the event. For the 100-Year MRP event, HAZUS-MH 2.1 estimates it is 99 percent probable that emergency facilities (police, fire, EMS, and medical facilities), schools, and specific facilities identified by Westmoreland County as critical (user-defined facilities such shelters, municipal buildings, and Departments of Public Works) will not experience any structural damage. These facilities are estimated to be nearly 100 percent functional on day one of the 100-year MRP earthquake event. Therefore, the impact to critical facilities is not significant for the 100-year event.

Tables 4.3.3-9 and 4.3.3-10 list the percent probability of critical facilities and utilities sustaining the damage category as defined by the column heading and percent functionality after the event for the 500-year and 2,500-year MRP earthquake events.

**Table 4.3.3-11. Estimated Damage and Loss of Functionality for Critical Facilities and Utilities in Westmoreland County for the 500-Year MRP Earthquake Event**

Name	Percent Probability of Sustaining Damage					Percent Functionality			
	None	Slight	Moderate	Extensive	Complete	Day 1	Day 7	Day 30	Day 90
<b>Critical Facilities</b>									
EOC	93	5	2	0	0	93	98	100	100
Medical	>99	<1	<1	0	0	>99	>99	100	100
Police	97	2	1	0	0	97	99	100	100
Fire	97	2	1	0	0	97	99	100	100
Schools	97	2	1	0	0	97	99	100	100
<b>Utilities</b>									
Potable Water	>99	<1	0	0	0	100	100	100	100
Wastewater	>99	<1	0	0	0	100	100	100	100
Electric Power	>99	<1	0	0	0	100	100	100	100

Name	Percent Probability of Sustaining Damage					Percent Functionality			
	None	Slight	Moderate	Extensive	Complete	Day 1	Day 7	Day 30	Day 90
Communication	>99	< 1	0	0	0	100	100	100	100

Source: HAZUS-MH 2.1

**Table 4.3.3-12. Estimated Damage and Loss of Functionality for Critical Facilities and Utilities in Westmoreland County for the 2,500-Year MRP Earthquake Event**

Name	Percent Probability of Sustaining Damage					Percent Functionality			
	None	Slight	Moderate	Extensive	Complete	Day 1	Day 7	Day 30	Day 90
<b>Critical Facilities</b>									
EOC	74	15	9	2	< 1	74	89	98	99
Medical	90	7	3	< 1	< 1	90	97	100	100
Police	84	10 - 11	5	< 1	< 1	83 - 84	94	99	100
Fire	84	10 - 11	5	< 1	< 1	83 - 84	94	99	100
Schools	84	10 - 11	5	< 1	< 1	83 - 84	94	99	100
<b>Utilities</b>									
Potable Water	84 - 85	13 - 15	1 - 2	< 1	0	93 - 94	100	100	100
Wastewater	84 - 85	13 - 15	1 - 2	< 1	0	88 - 90	100	100	100
Electric Power	85	14	2	< 1	0	92	100	100	100
Communication	85	14	2	< 1	0	99	100	100	100

Source: HAZUS-MH 2.1

#### 4.3.3.5.6 Impact on Economy

Earthquakes also have impacts on the economy, including: loss of business function, damage to inventory, relocation costs, wage loss, and rental loss caused by the repair or replacement of buildings. A HAZUS-MH analysis estimates the total economic loss associated with each earthquake scenario, which includes building- and lifeline-related losses (transportation and utility losses) based on the available inventory (facility [or GIS point] data only). Direct building losses are the estimated costs to repair or replace the damage caused to the building. These losses are reported in the Impact on General Building Stock section discussed earlier. Lifeline-related losses include the direct repair cost to transportation and utility systems and are reported in terms of the probability of reaching or exceeding a specified level of damage when subjected to a given level of ground motion. Additionally, economic loss includes business interruption losses associated with the inability to operate a business as a result of the damage sustained during the earthquake as well as temporary living expenses for those displaced. These losses are discussed below.

It is significant to note that, for the 500-year event, HAZUS-MH 2.1 estimates the County will incur approximately \$6.0 million in income losses (wage, rental, relocation, and capital-related losses) in addition to the 500-year event structural, non-structural, and content building stock losses (\$11.4 million). HAZUS-MH 2.1 estimates the County will incur nearly \$49 million in income losses for the 2,500-year event, mainly to the residential and commercial occupancy classes associated with wage, rental, relocation, and capital-related losses.

Utility damage results are not considered to be significant as a result of the 100-year and 500-year events. There is a 99 percent probability that utilities will not experience any damage for the 500-year event and



only a 1 percent probability slight damage could be experienced. Therefore, utility loss estimates as a result of the 100- and 500-year events are not discussed further in this assessment for this HMP.

Table 4.3.3-10 summarizes the HAZUS-MH 2.1 estimated probability of damage that each utility may sustain (as defined by the column heading) and estimated loss of use in days a result of a 2,500-year MRP earthquake event. Damage categories are related to the damage ratio (defined as ratio of repair to replacement cost) for evaluation of direct economic loss. Refer to the HAZUS-MH Earthquake Technical Manual for a description of the damage categories for each utility feature.

The HAZUS-MH analysis conducted did not compute any damage estimates for roadway segments and railroad tracks. However, it is assumed these features may experience damage as a result of ground failure and regional transportation and distribution of these materials will be interrupted as a result of an earthquake event. Losses to the community that result from damages to lifelines can be much greater than the cost of repair (HAZUS-MH 2.1 Earthquake User Manual 2012).

Earthquake events can significantly damage road bridges. These bridges are important because they often provide the only access to certain neighborhoods. Since softer soils can generally follow floodplain boundaries, bridges that cross watercourses should be considered vulnerable. A key factor in the degree of vulnerability will be the age of the facility, which will help indicate the standards the facility was built to achieve.

HAZUS-MH estimates the long-term economic impacts to the County for 15 years after the earthquake event. In terms of the highway transportation infrastructure, HAZUS-MH estimates \$690,000 in direct repair costs to bridges in the County as a result of a 2,500-year event. No loss is estimated for highway segments.

It is estimated that the airports in Westmoreland County will be 61 percent functional on day one of the 2,500-year event and an estimated 37-percent probability they will experience slight damage.

HAZUS-MH 2.1 also estimates the volume of debris that may be generated as a result of an earthquake event to enable the study region to prepare and rapidly and efficiently manage debris removal and disposal. Debris estimates are divided into two categories: (1) reinforced concrete and steel that require special equipment to break it up before it can be transported, and (2) brick, wood, and other debris that can be loaded directly onto trucks with bulldozers (HAZUS-MH Earthquake User's Manual).

HAZUS-MH 2.1 estimates 0 tons of debris will be generated for the 100-year MRP event. HAZUS-MH 2.1 estimates more than 15,492 tons of debris will be generated for the 500-year MRP event. For the 2,500-year MRP event, HAZUS-MH 2.1 estimates greater than 104,426 tons of debris will be generated.

**Table 4.3.3-13. Estimated Debris Generated by the 500- and 2,500-year MRP Earthquake Events**

Municipality	500-Year		2,500-Year	
	Brick/Wood (tons)	Concrete/Steel (tons)	Brick/Wood (tons)	Concrete/Steel (tons)
Allegheny-Vandergrift	180	32	1,120	313
Arnold	209	42	1,304	429
Derry Borough	83	16	521	154
Derry Township	267	56	1,678	557

## SECTION 4.3.3: RISK ASSESSMENT – EARTHQUAKE

Municipality	500-Year		2,500-Year	
	Brick/Wood (tons)	Concrete/Steel (tons)	Brick/Wood (tons)	Concrete/Steel (tons)
Derry Township-New Alexandria	176	34	1,111	337
Donegal-Cook	157	30	989	289
East Huntingdon	239	53	1,437	507
Fairfield-St. Clair-Seward-New Florence-Bolivar	165	30	1,037	292
Greensburg	606	140	3,800	1,438
Hempfield Township	1,061	216	6,534	2,110
Hempfield-Adamsburg	60	12	360	109
Hempfield-Arona	303	54	1,794	499
Jeannette	300	59	1,779	563
Jeannette-Penn	109	24	648	239
Latrobe	332	72	2,085	743
Ligonier Borough	74	17	463	172
Ligonier Township-Laurel Mountain Borough	293	57	1,831	572
Lower Burrell	434	83	2,690	830
Loyalhanna-Bell-Avonmore-Oklahoma	203	38	1,211	362
Monessen	318	59	1,883	550
Mount Pleasant Borough	251	70	1,506	705
Mount Pleasant Township	373	81	2,351	827
Murrysville	591	118	3,570	1,154
Murrysville-Belmont-Export	287	60	1,704	580
New Kensington	555	114	3,427	1,162
North Belle Vernon Borough	81	16	482	155
North Huntingdon Township	926	182	5,491	1,716
North Huntingdon-Manor	181	35	1,074	335
North Irwin - Irwin	179	36	1,064	343
Penn Township	659	129	3,938	1,238
Rostraver Township	362	72	2,170	682
Salem Township	283	71	1,793	735
Scottdale Borough	197	42	1,174	409
Sewickley Township	119	23	710	222

Municipality	500-Year		2,500-Year	
	Brick/Wood (tons)	Concrete/Steel (tons)	Brick/Wood (tons)	Concrete/Steel (tons)
Sewickley-Sutersville	82	15	489	141
South Greensburg	99	22	620	221
South Huntingdon Township	120	23	716	218
South Huntingdon-Smithton	91	18	545	169
Southwest Greensburg	89	17	558	174
Trafford Borough	149	32	886	306
Unity Township	562	126	3,526	1,273
Unity-Youngstown	147	27	919	261
Upper Burrell Township	84	20	517	200
Vandergrift Borough	117	22	717	218
Vandergrift-East Vandergrift	97	17	595	172
Washington Township	218	41	1,328	394
West Leechburg-Hyde Park-Allegheny	152	33	952	337
West Newton Borough	99	20	590	186
Youngwood Borough	138	33	822	319
<b>Westmoreland County (Total)</b>	<b>12,855</b>	<b>2,637</b>	<b>78,510</b>	<b>25,916</b>

Source: HAZUS-MH 2.1

#### 4.3.3.5.7 Impact on the Environment

Earthquakes can lead to numerous, widespread, and devastating environmental impacts. These impacts may include but are not limited to:

- Induced flooding or landslides
- Poor water quality
- Damage to vegetation
- Breakage in sewage or toxic material containments

Secondary impacts can include train derailments and spillage of hazardous materials and utility interruption.

#### 4.3.3.5.8 Future Growth and Development

As discussed in Section 4.4, areas targeted for future growth and development have been identified across the County. It is anticipated that the human exposure and vulnerability to earthquake impacts in newly developed areas will be similar to those that currently exist within the County. Current building codes require seismic provisions that should render new construction less vulnerable to seismic impacts than older, existing construction that may have been built to lower construction standards.

#### 4.3.3.5.9 Effect of Climate Change on Vulnerability

The impacts of global climate change on earthquake probability are unknown. Some scientists say that melting glaciers could induce tectonic activity. As ice melts and water runs off, tremendous amounts of weight are shifted on the earth's crust. As newly freed crust returns to its original, pre-glacier shape, it could cause seismic plates to slip and stimulate volcanic activity according to research into prehistoric earthquakes and volcanic activity. NASA and USGS scientists found that retreating glaciers in southern Alaska may be opening the way for future earthquakes (NASA, 2004).

Secondary impacts of earthquakes could be magnified by climate change. Soils saturated by repetitive storms could experience liquefaction during seismic activity as a result of the increased saturation. Dams storing increased volumes of water as a result of changes in the hydrograph could fail during seismic events. There are currently no models available to estimate these impacts.

#### 4.3.3.5.10 Additional Data and Next Steps

Ground shaking is the primary cause of earthquake damage to man-made structures, and soft soils amplify ground shaking. One contributor to the site amplification is the velocity the rock or soil transmits shear waves (S-waves). The NEHRP developed five soil classifications defined by their shear-wave velocity that alter the severity of an earthquake. The soil classification system ranges from A to E, where A represents hard rock that reduces ground motions from an earthquake and E represents soft soils that amplify and magnify ground shaking and increase building damage and losses. When this soil information becomes available, it may be incorporated into HAZUS-MH to further refine the County's vulnerability assessment.

Additional data to further refine the County's vulnerability assessment include (1) updated demographic data to update the default data in HAZUS-MH; and (2) updated building data to update the default data in HAZUS-MH. The County can identify un-reinforced masonry critical facilities and privately owned buildings (residences) using local knowledge and pictometry and orthophotos. These buildings may not withstand earthquakes of certain magnitudes and plans to provide emergency response/recovery efforts for these properties can be set in place. Further mitigation actions include training of County and municipal personnel to provide post-hazard event rapid visual damage assessments, increase of County and local debris management and logistic capabilities, and revised regulations to prevent additional construction of non-reinforced masonry buildings.

### 4.3.4 Extreme Temperature

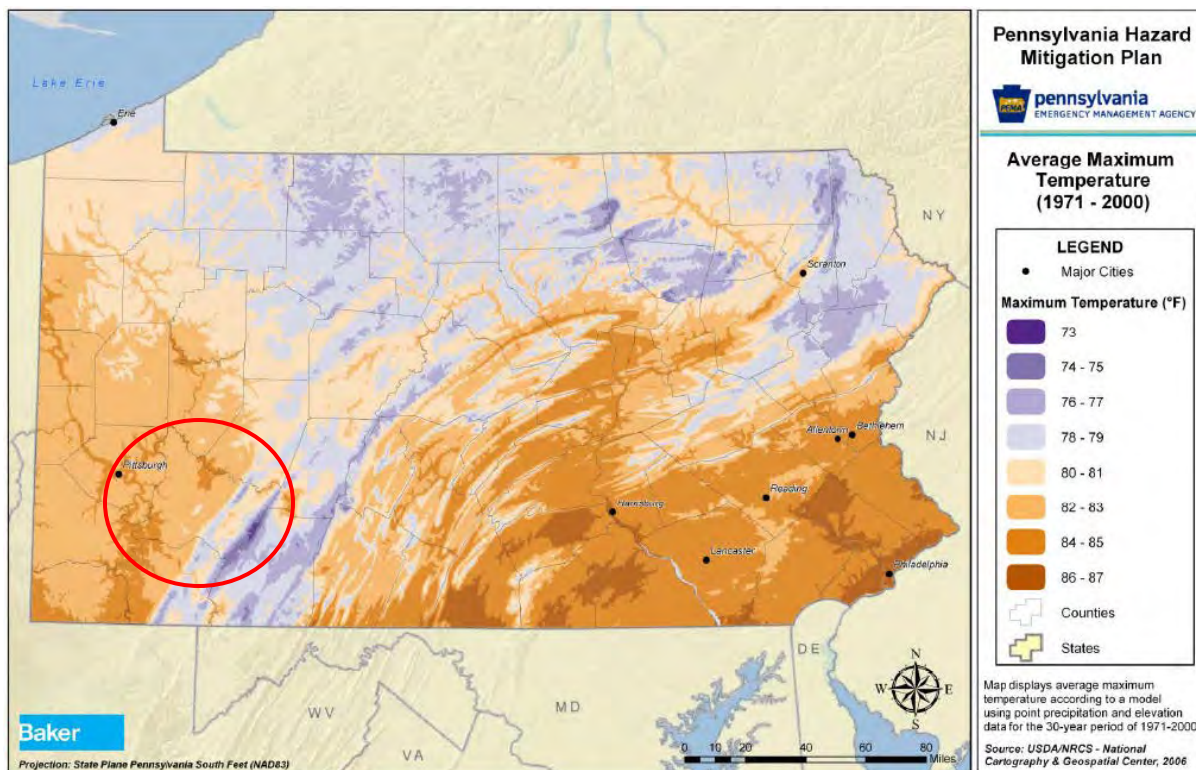
This section provides a profile and vulnerability assessment for the extreme temperature hazard for Westmoreland County, including extreme heat and extreme cold. Extreme heat can be described as temperatures that hover 10°F or more above the average high temperature for a region during the summer months. Parameters for extreme cold temperature events vary across different regions of the United States, but in Westmoreland County and other areas accustomed to winter weather, below 0 temperatures may be considered extreme cold (National Weather Service [NWS], Date Unknown). Mainly, cold temperatures may be classified as extreme when they drop well below what is considered normal for an area during the winter months, and often when they are accompanied by winter storm events. Combined with increases in wind speed, extreme cold temperatures in Pennsylvania (including Westmoreland County) can be life threatening to those exposed for extended periods of time.

#### 4.3.4.1 Location and Extent

Westmoreland County can experience many different temperature extremes in the summer and winter seasons. Areas most susceptible to extreme heat include urban environments, which tend to retain the heat well into the night, leaving little opportunity for dwellings to cool.

Figure 4.3.4-1 and Figure 4.3.4-2 show mean maximum and minimum temperatures throughout Pennsylvania according to county. Throughout July, the warmest month, high temperatures in Westmoreland County normally range from the low 80s in the northern areas to the mid 80s / upper 70s in the central and southern areas. During the colder months, most of Westmoreland County experiences low temperature averages ranging from 16°F to 17°F in the north to as high as 21°F in urban areas.

**Figure 4.3.4-1. Average Maximum Temperature throughout Pennsylvania (1971 and 2000)**

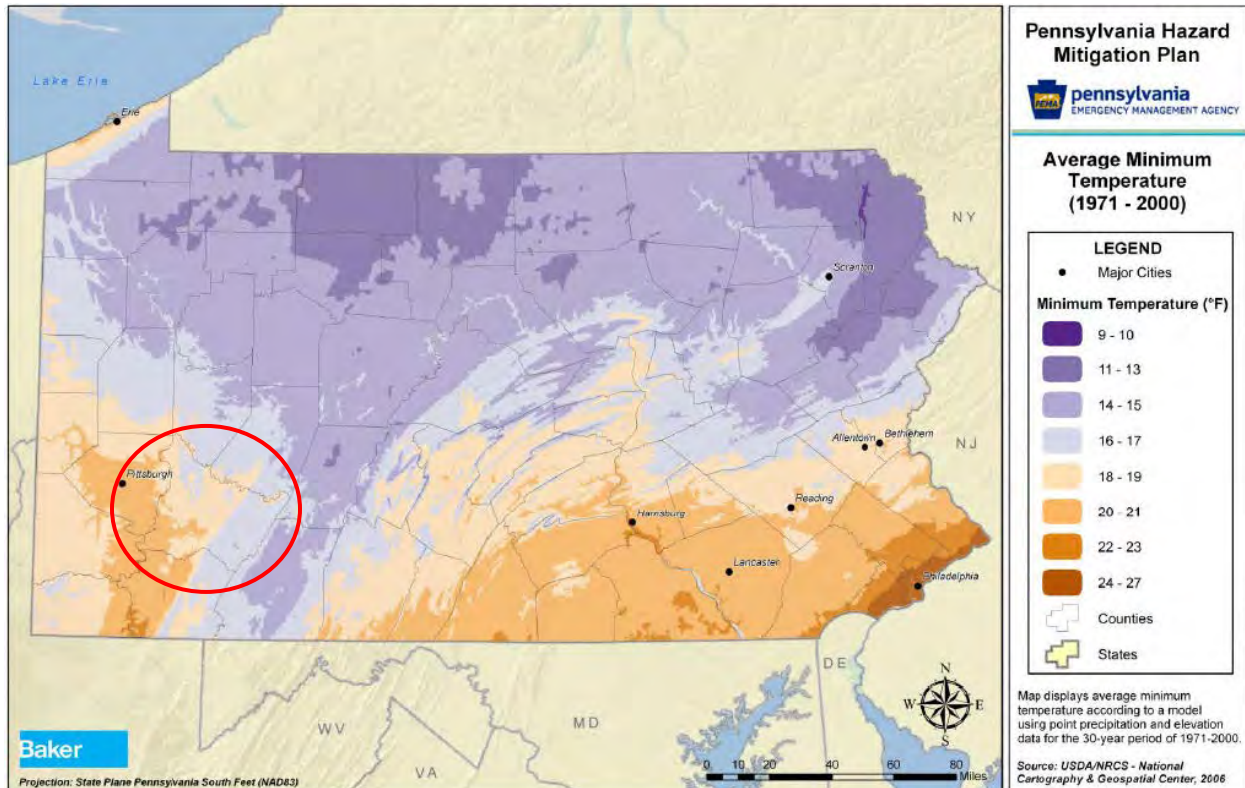


Source: Pennsylvania Emergency Management Agency (PEMA) 2013; highlight added.



June, July, and November are typically the warmest months in Westmoreland County and an extreme heat event could be considered any temperature that hovers around 10°F higher than the average high temperature. Given this definition and the average high temperatures for the County’s hottest months, extreme heat can vary from mid to high 90s.

*Figure 4.3.4-2. Average Minimum Temperature throughout Pennsylvania (1971 to 2000)*



Source: PEMA 2013

Note: Highlight added.

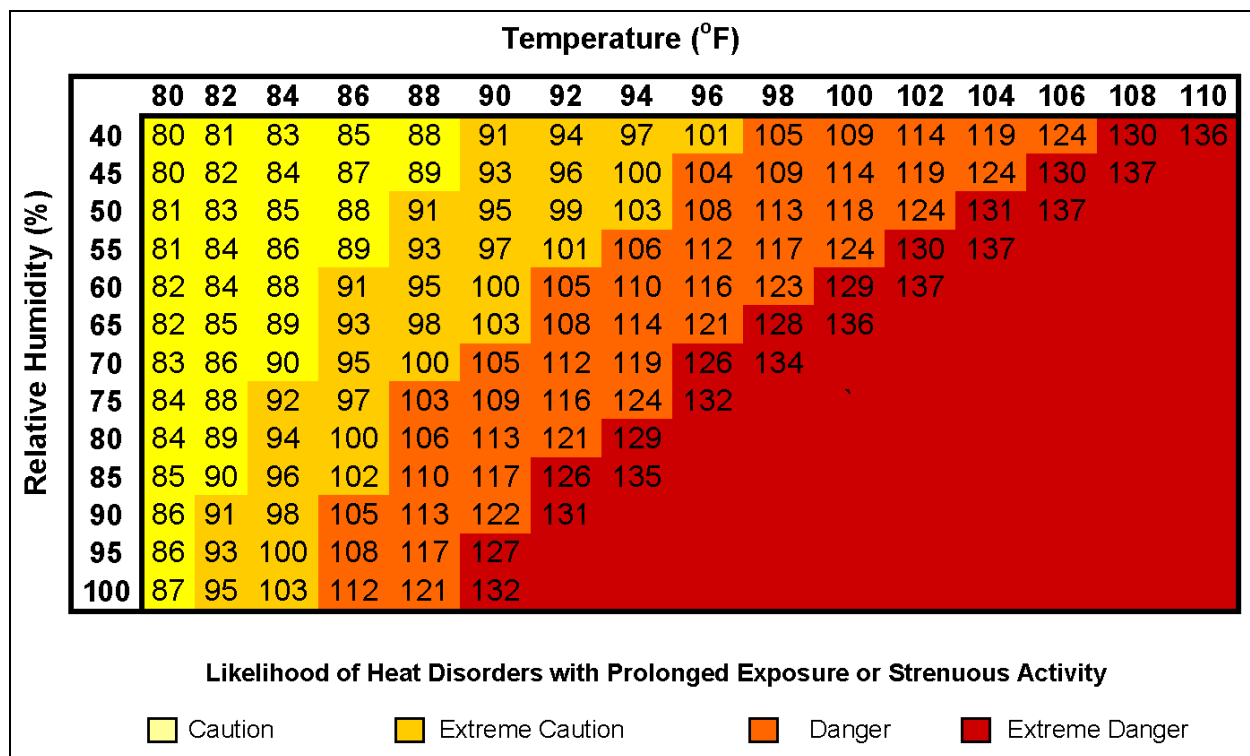
Because of its geographic location in the northeast, Westmoreland County is more likely to experience extreme cold temperatures in the winter.

#### 4.3.4.2 Range of Magnitude

The National Oceanic and Atmospheric Administration (NOAA)’s heat alert procedures are based mainly on heat index values. The heat index, given in degrees Fahrenheit, is a measure of perceived temperature when relative humidity is factored in with the actual air temperature. To find the heat index temperature, the temperature and relative humidity need to be known. Once both values are known, the heat index will correspond with both values (Figure 4.3.4-3). The heat index indicates the temperature the body feels. It is important to note that heat index values are devised for shady, light wind conditions. Exposure to full sunshine can increase heat index values by up to 15°F. Strong winds, particularly with very hot dry air, can also be extremely hazardous (NWS 2013).



Figure 4.3.4-3. NWS Heat Index Chart



Source: NWS 2013

Notes:

°F degrees Fahrenheit

% Percent

Exposure to heat can cause health problems indirectly, such as through the increased workload on the heart. This can be especially dangerous to individuals with pre-existing medical conditions, typically the elderly. Extremely high temperatures cause heat stress, which can be divided into four categories (outlined in Table 4.3.4-1). Each category is defined by apparent temperature, which is associated with a heat index value that captures the combined effects of dry air temperature and relative humidity on humans and animals. Major human risks for these temperatures include heat cramps, heat syncope, heat exhaustion, heatstroke, and death. Note that while the temperatures listed in Table 4.3.4-1 serve as a guide for various danger categories, the impacts of high temperatures will vary from person to person based on individual age, health, and other factors.

Table 4.3.4-1. Four Categories of Heat Stress

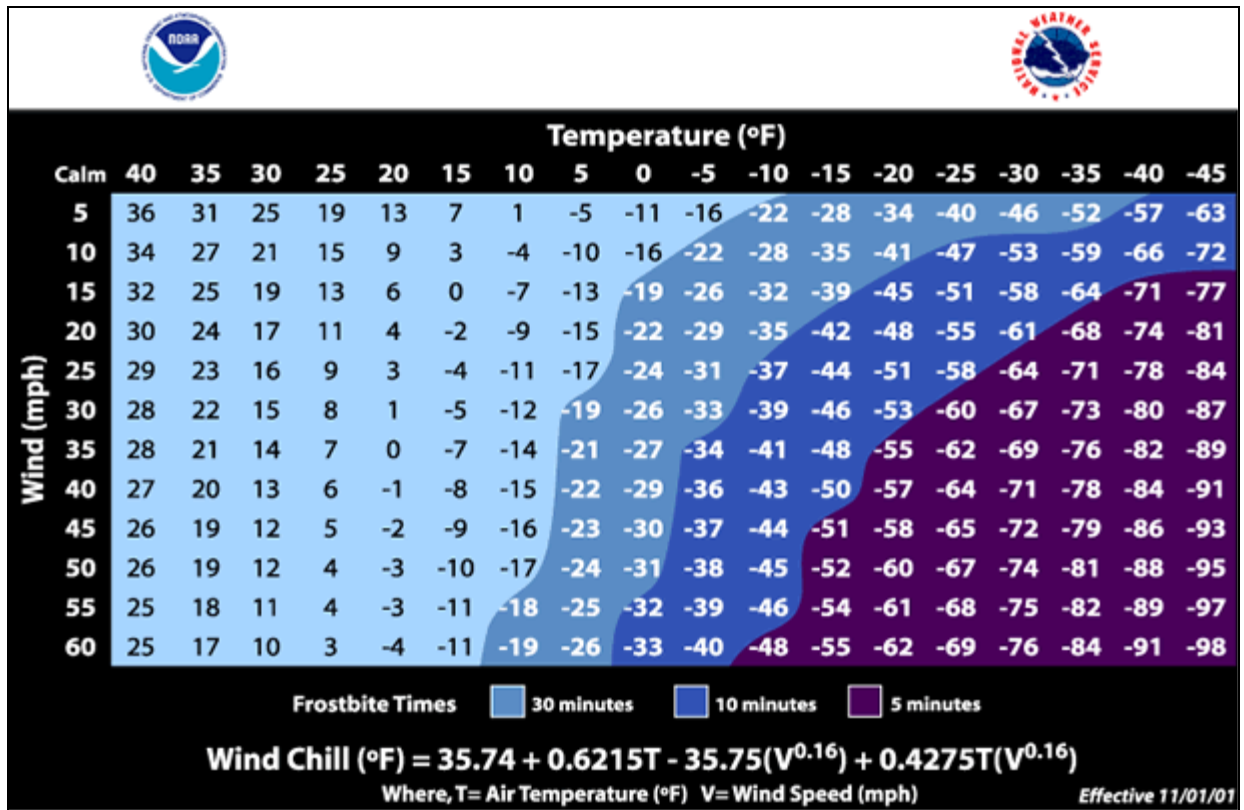
Danger Category	Heat Disorders	Apparent Temperature (°F)
I (Caution)	Fatigue is possible with prolonged exposure and physical activity.	80 to 90
II (Extreme Caution)	Sunstroke, heat cramps, and heat exhaustion are possible with prolonged exposure and physical activity.	90 to 105
III (Danger)	Sunstroke, heat cramps, or heat exhaustion are likely; heat stroke is possible with prolonged exposure and physical activity.	105 to 130
IV (Extreme Danger)	Heatstroke or sunstroke are imminent.	>130

Source: PEMA 2010

The extent (severity or magnitude) of extreme cold temperatures are generally measured through the wind chill temperature (WCT) index. WCT is the temperature that people and animals feel when outside. It is based on the rate of heat loss from exposed skin by the effects of wind and cold. As the wind increases, the body is cooled at a faster rate causing the skin’s temperature to drop (NWS Date Unknown).

On November 1, 2001, the NWS implemented a new process for determining the WCT index that was designed to more accurately calculate how cold air feels on human skin. The table below shows the new WCT index. The WCT index includes a frostbite indicator, showing points where temperature, wind speed, and exposure time will produce frostbite in humans. Figure 4.3.4-4 shows three shaded areas of frostbite danger. Each shaded area shows the amount of time a person can be exposed before frostbite develops (NWS Date Unknown).

Figure 4.3.4-4. NWS Wind Chill Index



Source: NWS 2009

Notes:

°F degrees Fahrenheit mph miles per hour

The following impacts can be observed following an extreme temperature event:

- Health Impacts – The health impacts of extreme cold are greater in terms of mortality in humans, but often after more prolonged exposure versus a cold snap. Extreme heat waves, however, can prove more deadly over a shorter duration. At greatest risk of death in heat waves are the urban-dwelling elderly without access to an air-conditioned environment for at least part of the day.
- Transportation – Cold weather can impact automotive engines (possibly stranding motorists) and stress metal bridge structures. Highways and railroad tracks can become distorted in high heat. Disruptions to the transportation network and accidents caused by extreme temperatures represent an additional risk.

- Agriculture – Absolute temperature and duration of extreme cold can have devastating effects on trees and winter crops. Livestock is especially vulnerable to heat, and crop yields can be impacted by heat waves that occur during key development stages.
- Energy – Energy consumption rises significantly during extreme cold weather. Residents are placed in extreme danger when any fuel shortages or utility failures prevent the heating of a dwelling. Extreme heat can also result in utility interruptions, and transmission lines sagging from the heat can lead to shorting out.

The range of these impacts, especially health effects, can be mitigated through improved forecasts, warnings, community preparedness, and appropriate community-based response.

Westmoreland County’s worst-case extreme heat scenario would be an excessive heat spell occurring during a summer holiday weekend, such as Independence Day weekend. Summer holiday weekends bring people out of their air-conditioned work environments and into the outdoors, often despite dangerous heat and humidity levels.

Westmoreland County’s extreme cold temperature scenario involves below-0 temperatures and chilling winds that could threaten the safety of residents and continuity of utilities. In January 2014, the western region of Pennsylvania, including Westmoreland County, experienced extreme cold. In the early morning of January 7, 2014, Donegal and Laurel Mountain saw the temperature dip to -15F and -17F, respectively.

#### 4.3.4.3 Past Occurrence

The Commonwealth of Pennsylvania 2010 Standard Hazard Mitigation Plan (PA HMP) noted over 300 extreme temperature events throughout the Commonwealth. Of those events, Table 4.3.4-2 identifies extreme cold/wind chill events that occurred around western Pennsylvania and the Westmoreland County region. The temperatures indicated in this table do not necessarily represent temperatures reached in Westmoreland County. Extreme heat events often occurred in the eastern portion of the State. Based on research and review of relevant records and the PA HMP, no excessive heat events have occurred in Westmoreland County or the surrounding area.

The NOAA-National Climatic Data Center (NCDC) Storm Events database contains references to extreme temperature events in Westmoreland County from 1950 to January 2014, as shown in Table 4.3.4-2 below. The database indicated that 17 separate, extreme events occurred throughout the County from 1950 to January 2014.

*Table 4.3.4-2. Extreme Temperature Events in Westmoreland County, 1950 to 2014*

Date	Type	Temperature (Approximate)	Source
2/19/1993	Cold/Windchill	0°F	NOAA-NCDC
1/14/1994	Cold/Windchill	-20°F	NOAA-NCDC
2/13/1995	Cold/Windchill	0°F	NOAA-NCDC
7/13/1995	Extreme Heat	100°F	NOAA-NCDC
1/26/2007	Cold/Wind Chill	-15°F	NOAA-NCDC
2/3/2007	Cold/Windchill	-18°F	NOAA-NCDC
2/16/2007	Cold/Windchill	-15°F	NOAA-NCDC
3/6/2007	Cold/Windchill	-18°F	NOAA-NCDC
1/19/2008	Cold/Windchill	-18°F	NOAA-NCDC
2/10/2008	Cold/Windchill	-20°F	NOAA-NCDC
12/21/2008	Cold/Windchill	-18°F	NOAA-NCDC
1/16/2009	Cold/Windchill	-10°F	NOAA-NCDC
2/4/2009	Cold/Windchill	-20°F	NOAA-NCDC
3/2/2009	Cold/Windchill	-20°F	NOAA-NCDC
12/11/2009	Cold/Windchill	-15°F	NOAA-NCDC
1/22/2013	Cold/Windchill	-10°F	NOAA-NCDC
1/7/2014	Cold/Windchill	-16°F	Harding and Culgan, 2014

Sources: NOAA-NCDC, Harding and Culgan

#### 4.3.4.4 Future Occurrence

Because of its location and geography, Westmoreland County is more likely to encounter extreme cold than excessively hot weather. Topography and vegetation can impact temperature differentials across Westmoreland County.

The Commonwealth of Pennsylvania 2013 All-Hazard Mitigation Plan provides information on the probability of extreme maximum and minimum temperatures using data from 30 recording stations throughout the State. These stations produce location-specific data, which are more precise than the broader geographic area averages referenced under the Location and Extent section of this chapter. According to these data, high temperatures of 90°F or above occur on the average of 10 to 12.5 days per year in Westmoreland County. There are, on average, 1 to 2 days per year where temperatures in Westmoreland County reach or exceed 95°F. For temperatures greater than 100°F, the number of years between occurrences ranges between 10 and 40. Extreme cold temperatures less than 0°F occur on the average of 4 to 8 days annually with the greatest number of occurrences in the northwest areas of the County, and the shortest occurrences in the southern portion. For temperatures lower than -10°F, the number of years between occurrences ranges between 0 and 5, and the number of years between occurrences for temperatures lower than -20°F ranges between 20 and 50.

The future occurrence of extreme temperatures can be considered likely as defined by the Risk Factor Methodology probability criteria (described in Section 4.4).

#### 4.3.4.5 Vulnerability Assessment

To understand risk, a community must evaluate the assets that are exposed or vulnerable in the identified hazard area. Most extreme temperature events involve a large region; therefore, all of Westmoreland County has been identified as the hazard area. This section evaluates and estimates the potential impact of extreme temperature events on the County in the following sections:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on life, health, and safety; general building stock and critical facilities; economy; environment; and future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist understanding of this hazard over time

##### 4.3.4.5.1 Overview of Vulnerability

Extreme temperatures generally occur for a short period of time but can cause a range of impacts, particularly to vulnerable populations that may not have access to adequate cooling or heating. This natural hazard can also cause impacts to agriculture (crops and animals), infrastructure (e.g., through pipe bursts associated with freezing, power failure), and the economy.

##### 4.3.4.5.2 Data and Methodology

At the time of this Plan, insufficient data are available to model the long-term potential impacts of extreme temperature on the Westmoreland County. Over time, additional data will be collected to allow better analysis for this hazard. Available information and a preliminary assessment are provided below.

##### 4.3.4.5.3 Impact on Life, Health and Safety

For the purposes of this Plan, the entire population in the County is considered vulnerable to extreme temperature events. Extreme temperature events have potential health impacts including injury and death.

According to the Centers for Disease Control and Prevention (CDC), populations most at risk to extreme cold and heat events include the following: (1) the elderly, who are less able to withstand temperature extremes because of their age, health conditions, and limited mobility to access shelters; (2) infants and children up to 4 years of age; (3) individuals who are physically ill (e.g., heart disease or high blood pressure); (4) low-income persons that cannot afford proper heating and cooling resources; and (5) the general public who may physically overexert themselves while working or exercising during extreme heat events, or may experience hypothermia during extreme cold events.

Meteorologists can accurately forecast extreme heat event development and the severity of the associated conditions with several days lead time. These forecasts provide an opportunity for public health and other officials to notify vulnerable populations, implement short-term emergency response actions, and focus surveillance and relief efforts on those at greatest risk. Adhering to extreme temperature warnings can significantly reduce the risk of temperature-related deaths.

Section 2 of this Plan describes the population in Westmoreland County over the age of 65, and population with an annual income below the poverty threshold.



#### 4.3.4.5.4 Impact on General Building Stock

All of the building stock in Westmoreland County is exposed to the extreme temperature hazard. Section 2 of this Plan summarizes the building inventory in the County. Extreme heat generally does not impact buildings. Losses may be associated with the overheating of heating, ventilation, and air-conditioning (HVAC) systems. Extreme cold temperature events can damage buildings in the event of freezing or bursting pipes and during the associated freeze/thaw cycles. Additionally, manufactured homes (mobile homes) and antiquated or poorly constructed facilities may have inadequate capabilities to withstand extreme temperatures.

#### 4.3.4.5.5 Impact on Critical Facilities

All critical facilities in Westmoreland County are exposed to the extreme temperature hazard. Impacts to critical facilities are the same as those described for general building stock (above). Additionally, critical facilities must remain operational during natural hazard events. Extreme heat events can sometimes cause short periods of utility failure commonly referred to as “brown-outs,” caused by increased usage from air conditioners and appliances. Similarly, heavy snowfall and ice storms associated with extreme cold temperature events can cause power interruption as well. Backup power is recommended for critical facilities and infrastructure.

#### 4.3.4.5.6 Impact on the Economy

Extreme temperature events also have impacts on the economy, including loss of business function and damage/loss of inventory. Business-owners may be faced with increased financial burdens caused by unexpected repairs to the building (e.g., pipes bursting), higher-than-normal utility bills, or business interruption due to power failure (i.e., loss of electricity, telecommunications).

The agricultural industry is most at risk in terms of economic impact and damage caused by extreme temperature events. Extreme heat events can result in drought and dry conditions and directly impact livestock and crop production.

#### 4.3.4.5.7 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 years have been identified across the County and are described in Section 4.4 of this Plan. Any new development and new residents are anticipated to be exposed to the extreme temperature hazard.

#### 4.3.4.5.8 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and at the local level, climate change has the potential to alter the prevalence and severity of weather extremes such as extreme temperature events. While predicting changes in extreme temperature events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society, and the environment (U.S. Environmental Protection Agency [EPA] 2006).

Pennsylvania’s Department of Environmental Protection (PADEP) was directed by the Climate Change Act (Act 70 of 2008) to initiate a study of the potential impacts of global climate change on the Commonwealth. The June 2009 Pennsylvania Climate Impact Assessment’s main findings indicate that Pennsylvania is very likely to experience increased temperatures in the 21st century. Higher summer

temperatures will result in higher ozone concentrations in urban areas, which can negatively impact the respiratory health of members of the vulnerable populations. Increased winter temperatures will mean fewer cold-related deaths (Shortle et al. 2009).

With 1 to 3-degree increases in temperature, Pennsylvania farmers' yields of hay, corn, and soybeans may increase, while yields of cool temperature-adapted fruits such as apples and potatoes may decrease. However, changes in these crop yields will greatly depend on the exact temperature change. Dairy producers may experience the greatest challenges because they rely on their own crop production, their animals may experience heat stress, and productivity may be impacted (Shortle et al. 2009). It is clear that temperature changes will impact the agricultural industry, which is part of Westmoreland County's economy.

#### 4.3.4.5.9 Additional Data and Next Steps

For future Plan updates, Westmoreland County can track data on extreme temperature events, and obtain additional County- and jurisdiction-specific information on past and future events, particularly in terms of any injuries, deaths, shelter needs, pipe freeze, agricultural losses, and other impacts. This information will help to identify any concerns or trends for which mitigation measures should be developed or refined. In time, quantitative modeling of estimated extreme heat and cold events may be feasible as data are gathered and improved.

### 4.3.5 Flood

This section provides a profile and vulnerability assessment for the flood hazard for Westmoreland County. Floods are one of the most common natural hazards in the United States and are the most prevalent type of natural disaster occurring in Pennsylvania. Pennsylvania has more miles of streams than any other state and leads the United States in flood-related losses. Over 94 percent of the State's municipalities have been designated as flood-prone areas. Both seasonal and flash floods have been the cause of millions of dollars in annual property damages, loss of lives, and disruption of economic activities (Pennsylvania Environmental Management Agency [PEMA] 2010).

Federal Emergency Management Agency's (FEMA) definition for flooding is "a general and temporary condition of partial or complete inundation of 2 or more acres of normally dry land area or of two or more properties from the overflow of inland or tidal waters or the rapid accumulation of runoff of surface waters from any source" (FEMA 2008).

Most floods fall into three categories: riverine, coastal, and shallow (FEMA 2005). Other types of floods may include ice-jam floods, flash floods, stormwater floods, alluvial fan floods, dam failure floods, and floods associated with local drainage or high groundwater (as indicated in the previous flood definition). For the purpose of this Plan and as deemed appropriate by the Steering Committee, riverine, flash, ice-jam, and stormwater flooding are the main flood types of concern for Westmoreland County. These types of floods are further discussed below.

Riverine Floods – Riverine floods are the most common flood type and occur along a channel. Channels are defined features on the ground that carry water through and out of a watershed. They may be called rivers, creeks, streams, or ditches. When a channel receives too much water, the excess water flows over its banks and inundates low-lying areas. These floods usually occur after heavy rains, heavy thunderstorms, or snowmelt, and can be slow or fast-rising, and generally develop over a period of hours to days (FEMA 2005; FEMA 2008; Illinois Association for Floodplain and Stormwater Management 2006).

Flash Floods – According to the National Weather Service (NWS), flash floods are a rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within 6 hours of the causative event (e.g., intense rainfall, dam failure, or ice jam) (NWS 2009).

Flash floods can occur very quickly and with very little warning. This type of flood can be deadly because it produces rapid rises in water levels and has devastating flow velocities. Urban areas are more susceptible to flash floods because a high percentage of the surface area is impervious (PEMA 2010).

The actual time may vary in different parts of the country. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters (NWS 2009). Flash floods often have a dangerous wall of roaring water that carries rocks, mud, and other debris and can sweep away most things in its path. They usually result from intense storms dropping large amounts of rain within a brief period with little or no warning, and can reach their peak in only a few minutes. They normally occur in the summer during the thunderstorm season. The most severe flooding conditions usually occur when direct rainfall is augmented by snowmelt. If the soil is saturated or frozen, stream flow may increase because of the inability of the soil to absorb additional precipitation (FEMA 2008).

Ice-Jam Floods - An ice jam is an accumulation of ice that acts as a natural dam and restricts flow of a body of water. Ice jams occur when warm temperatures and heavy rains cause rapid snow melt. The melting snow, combined with the heavy rain, causes frozen rivers to swell. The rising water breaks the

ice layers into large chunks, which float downstream and often pile up near narrow passages and obstructions (bridges and dams). Ice jams may build up to a thickness great enough to raise the water level and cause flooding (NESEC Date Unknown; U.S. Army Corps of Engineers [USACE] 2002).

There are two different types of ice jams: freeze-up and breakup. Freeze-up jams occur in the early to mid-winter when floating ice may slow or stop due to a change in water slope as it reaches an obstruction to movement. Breakup jams occur during periods of thaw, generally in late winter and early spring. The ice cover breakup is usually associated with a rapid increase in runoff and corresponding river discharge caused by a heavy rainfall, snowmelt, or warmer temperatures (USACE 2002).

Dam Failure Floods – A dam is an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water (FEMA 2010). Dams are man-made structures built across a stream or river that impound water and reduce the flow downstream (FEMA 2003). They are built for the purpose of power production, agriculture, water supply, recreation, and flood protection. Dam failure is any malfunction or abnormality outside of the design that adversely affects a dam’s primary function of impounding water (FEMA 2011). Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam (inadequate spillway capacity)
- Prolonged periods of rainfall and flooding
- Deliberate acts of sabotage (terrorism)
- Structural failure of materials used in dam construction
- Movement and/or failure of the foundation supporting the dam
- Settlement and cracking of concrete or embankment dams
- Piping and internal erosion of soil in embankment dams
- Inadequate or negligent operation, maintenance, and upkeep
- Failure of upstream dams on the same waterway
- Earthquake (liquefaction/landslides) (FEMA 2010)

Flooding can occur when a dam fails or breaks, producing effects similar to flash floods. Areas that are most susceptible to the effects of floods are low-lying areas that are near water or downstream from a dam (FEMA 2011).

Flooding caused by dam failure is addressed in Section 4.3.15 of this Plan.

#### 4.3.5.1 Location and Extent

Flooding in Pennsylvania is typically associated with abnormally high and intense rainfall amounts. It can also be caused by sudden snowmelt, landslides, or dam failures. In Pennsylvania, flooding usually occurs in the summer; however, flooding has occurred during the winter months as well.

Floodplains are found in lowland areas adjacent to rivers, streams, creeks, lakes, or other bodies of water that become inundated during a flood. The size of a floodplain is described by the recurrence interval of a given flood. A 1-percent annual chance floodplain is smaller than the floodplain associated with a flood that has a 0.2-percent annual chance of occurring (PEMA 2010).

Flooding is the most significant natural hazard in Westmoreland County. Much of Westmoreland County’s border is formed by a set of rivers: the Conemaugh to the north, the Monongahela to the southwest, the Youghiogheny to the west, and the Allegheny to the northwest. Numerous creeks and their tributaries also flow through the County: Kiskiminetas Creek in the north, Loyalhanna Creek in the east,

Indian Creek in the southeast, Jacobs Creek in the south, Sewickley Creek in the southwest, Turtle Creek in the west, and Pucketa-Chartiers in the northwest.

In accordance with the 1978 Pennsylvania Stormwater Management Act (Act 167), counties are required to prepare stormwater management plans on a watershed-by-watershed basis that provide for the improved management of the stormwater impacts associated with the development of land. In 2010 Westmoreland developed and implemented Phase I of the County Stormwater Management Plan. This phase of the plan includes the Scope of Study – Establishing procedures used to prepare the Plan. These procedures are determined by an overall survey of:

- Specific watershed characteristics and hydrologic conditions;
- Stormwater related problems and significant obstructions;
- Alternative measures for control; and
- Goals, objectives, solution strategies, and estimated costs for Phase 2 of the Plan.

Due to budgetary restrictions Phase II of the County Stormwater Management Plan has not been implemented as of March 2014. The Phase II Stormwater Management Plan would conduct stormwater runoff modeling for each of the eleven watersheds in Westmoreland County. As a result of this modeling, mitigation strategies would be developed to address runoff and subsequent flooding in those watersheds. The implementation of Phase II is a high priority mitigation action for Westmoreland County and is further detailed in the Mitigation Strategy Section 6.0 of this document.

### **FEMA Regulatory Flood Zones**

According to FEMA, flood hazard areas are defined as areas that are shown to be inundated by a flood of a given magnitude on a map. These areas are determined using statistical analyses of records of river flow, storm tides, and rainfall; information obtained through consultation with the community; floodplain topographic surveys; and hydrologic and hydraulic analyses. Flood hazard areas are delineated on FEMA's Flood Insurance Rate Maps (FIRM), which are official maps of a community on which the Federal Insurance and Mitigation Administration has delineated both the Special Flood Hazard Areas (SFHA) and the risk premium zones applicable to the community. These maps identify the SFHAs; the location of a specific property in relation to the SFHA; the base flood elevation (BFE) (1-percent annual chance) at a specific site; the magnitude of flood a flood hazard in a specific area; the undeveloped coastal barriers where flood insurance is not available and locates regulatory floodways and floodplain boundaries (1-percent and 0.2-percent annual chance floodplain boundaries) (FEMA 2003; FEMA 2005; FEMA 2008).

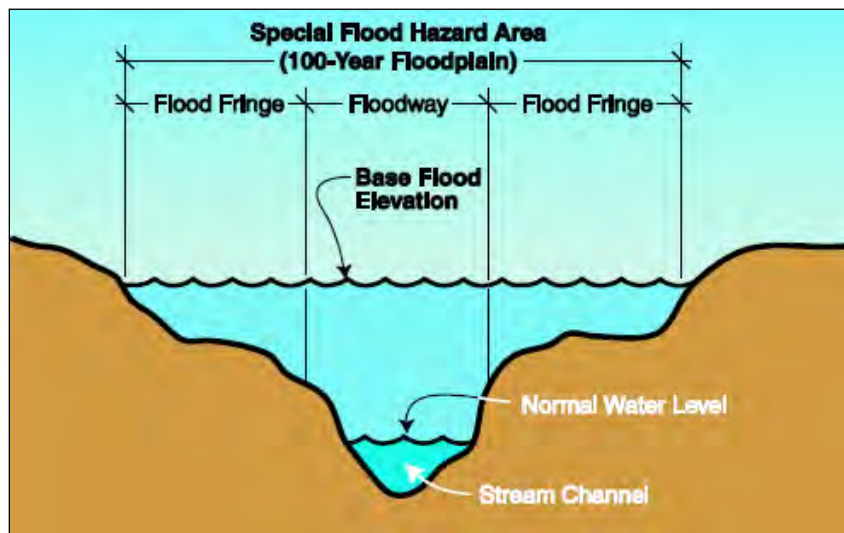
The land area covered by the floodwaters of the base flood is the SFHA on a FIRM. It is the area where the National Flood Insurance Programs (NFIP) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. This regulatory boundary is a convenient tool for assessing vulnerability and risk in flood-prone communities since many communities have maps showing the extent of the base flood and likely depths that will be experienced.

The 1-percent annual chance flood is referred to as the base flood. As defined by NFIP, the BFE on a FIRM is the elevation of a base flood event, or a flood which has a one-percent chance of occurring in any given year. The BFE describes the exact elevation of the water that will result from a given discharge level, which is one of the most important factors used in estimating the potential damage to occur in a given area. A structure located within a 1-percent annual chance floodplain has a 26-percent chance of suffering flood damage during the term of a 30-year mortgage. The 1-percent annual chance flood is a regulatory standard used by federal agencies and most states, to administer floodplain management programs. The 1-percent annual chance flood is used by the NFIP as the basis for insurance requirements



nationwide. FIRMs also depict 0.2-percent annual chance flood designations (FEMA 2003). Figure 4.3.5-2 depicts the special flood hazard area, the base flood elevation, the flood fringe, and the floodway areas of a floodplain.

*Figure 4.3.5-1 Floodplain Illustration*

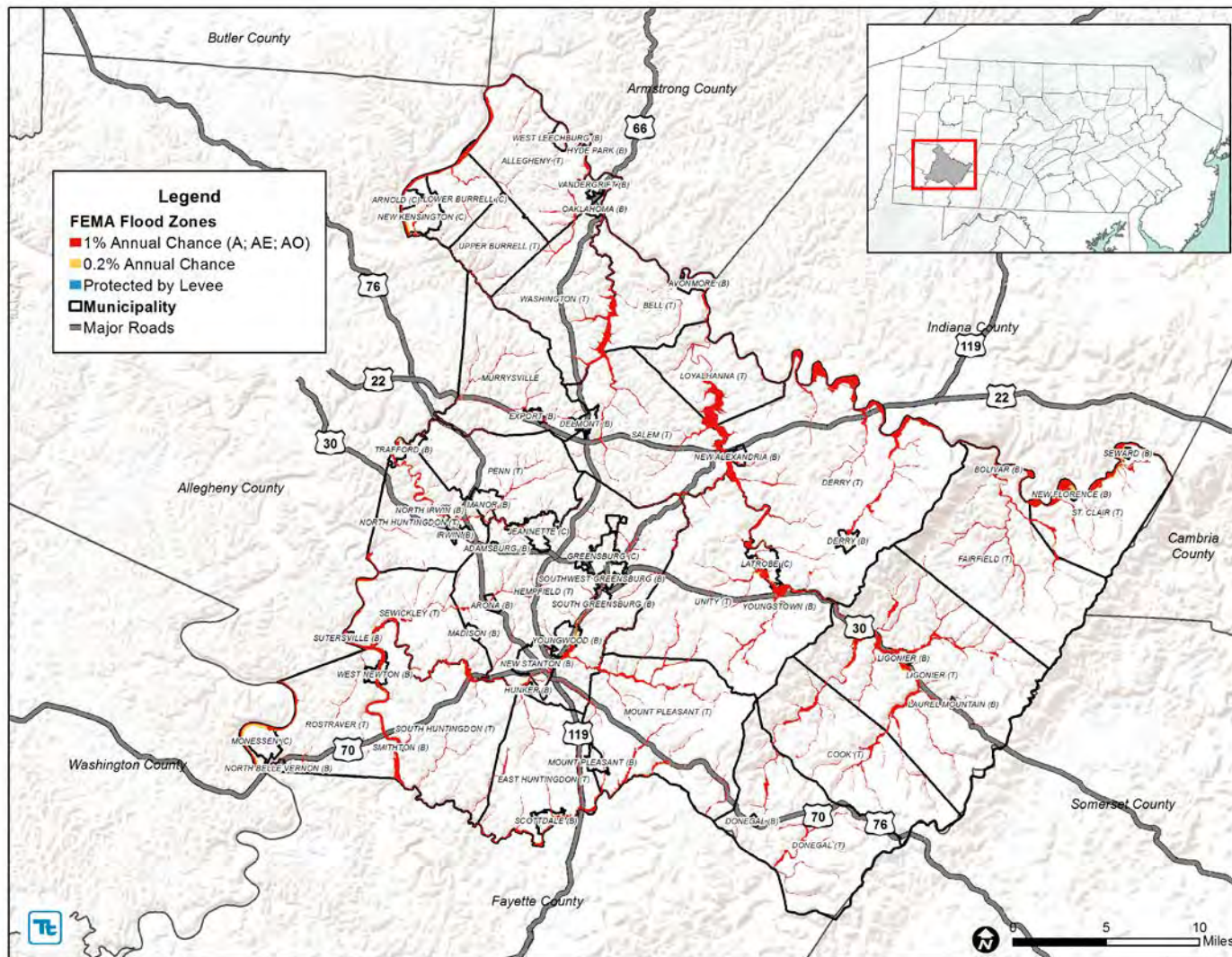


Source: PEMA 2013

The Special Flood Hazard Area (SFHA) serves as the primary regulatory boundary used by FEMA and Pennsylvania. Digitized Flood Insurance Rate Maps (DFIRM), FIRMs and other flood hazard information can be used to identify the expected spatial extent of flooding from a 1-percent and 0.2-percent annual chance event.

At the time this Plan was written, the March 2011 DFIRMs are considered the best available and used for the risk analysis. Figure 4.3.5-3 illustrates the NFIP flood zones in Westmoreland County.

Figure 4.3.5-2 NFIP Floodplains in Westmoreland County



Source: Westmoreland County 2013



While the FIRMs provide a creditable source to document extent and location of the flood hazard, there are limitations to the accuracy of the data reflected on these maps. As such, it is noted that FIRMs are based on the existing hydrology conditions at the time of map preparation. FIRMs are not set up to account for the possible changes in hydrology that can occur over time.

### **Flood Insurance Study**

In addition to FIRM and DFIRMs, FEMA also provides Flood Insurance Studies (FIS) for entire counties and individual jurisdictions. These studies aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. They are narrative reports of countywide flood hazards, including descriptions of the flood areas studied and the engineered methods used, principal flood problems, flood protection measures and graphic profiles of the flood sources (FEMA 2008). A countywide FIS for Westmoreland County has not been completed.

### **Ice-Jam Hazard Areas**

Ice jams are common in northeastern United States, and the State of Pennsylvania is not an exception. The Ice Jam Database, maintained by the Ice Engineering Group at the USACE Cold Regions Research and Engineering Laboratory (CRREL), currently consists of over 19,000 records from across the United States. According to the USACE-CRREL, Westmoreland County experienced 19 historic ice-jam events between 1780 and 2013 (USACE 2013). Historical events are further mentioned in the “Past Occurrence” section of this hazard profile.

#### **4.3.5.2 Range of Magnitude**

Both localized and widespread floods are considered hazards when people and property are affected. Injuries and deaths can occur when people are swept away by flood currents, or bacteria and disease are spread by moving or stagnant floodwaters. Most property damage results from inundation by sediment-filled water. A large amount of rainfall over a short period of time can result in flash floods. Small amounts of rain can cause flooding in areas with frozen soil or saturated soils from a previous event or if the rain is concentrated in areas with impervious surfaces (PEMA 2010).

Several factors determine the severity of floods, including intensity and duration, topography, ground cover, and rate of snowmelt. Water runoff is greater in areas with steep slopes and little or no vegetative ground cover. Many areas in Pennsylvania have relatively steep slopes that promote quick surface water runoff. Most storms track from west to east; however, some originate in the Great Lakes or the Atlantic Ocean (PEMA 2010).

Rainfall in Pennsylvania is about average for the eastern United States. When classified, the amount of precipitation can be divided into six categories. The six categories are as follows:

- Very light rain – precipitation rate of <0.01 inches per hour
- Light rain – precipitation rate between 0.01 inch and 0.04 inch per hour
- Moderate rain – precipitation rate between 0.04 inch and 0.16 inch per hour
- Heavy rain – precipitation rate between 0.16 inch and 0.63 inch per hour
- Very heavy rain – precipitation rate between 0.63 inch and 2 inches per hour
- Extreme rain – precipitation rate greater than 2 inches per hour (PEMA 2010)

The severity of a flood depends not only on the amount of water that accumulates in a period of time, but also on the land's ability to manage this water. One element is the size of rivers and streams in an area; but an equally important factor is the land's absorbency. When it rains, soil acts as a sponge. When the

land is saturated or frozen, infiltration into the ground slows and any more water that accumulates must flow as runoff (Harris 2001).

### **Riverine and Flash Floods**

In the case of riverine or flash flooding, once a river reaches flood stage, the flood extent or severity categories used by the NWS include minor flooding, moderate flooding, and major flooding. Each category has a definition based on property damage and public threat:

- Minor Flooding - minimal or no property damage, but possibly some public threat or inconvenience
- Moderate Flooding - some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary.
- Major Flooding - extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations (NWS 2011).

The worst flooding to occur in Westmoreland County was flash flooding on June 17-18, 2009. Major flash flooding occurred over eastern Allegheny and western Westmoreland Counties with estimated damage of \$18 million to public infrastructure and private buildings. Widespread flash flooding occurred across much of western and central Westmoreland County from Murrysville to Greensburg and Mount Pleasant. At least 1,192 buildings were affected, with 136 buildings having major damage and 11 buildings destroyed. Most major roadways had flooding and some were closed well after the water receded to clear debris. Westmoreland County suffered \$9 million in property damages.

#### **4.3.5.3 Past Occurrence**

Many sources provided historical information regarding previous occurrences and losses associated with flooding events throughout the State of Pennsylvania and Westmoreland County. With so many sources reviewed for the purpose of this Hazard Mitigation Plan (HMP), loss and impact information for many events could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP.

According to the National Oceanic and Atmospheric Administration's National Climatic Data Center (NOAA NCDC), storm event database, Westmoreland County experienced 110 flood events between April 30, 1950, and April 30, 2013 (the dates for which data are available). Total property damages as a result of these flood events were estimated at \$12 million. This total also includes damages to other counties. According to the Hazard Research Lab at the University of South Carolina's Spatial Hazard Events and Losses Database for the United States (SHELDUS), between 1960 and 2010, 95 flood events occurred within Westmorland County. The database indicated that flood events and losses specifically associated with the County and its municipalities totaled over \$290 million in property damage and over \$746,000 in crop damage. However, these numbers may vary because the database identifies the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2013, the State of Pennsylvania experienced 55 FEMA-declared flood-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: severe storms, mudslides, flash flooding, tropical storms, tropical depressions, high winds, and rains. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations (FEMA 2013). Westmoreland County was included in seven of the 55 declarations, as identified in Table 4.3.5-1.

Based on all sources researched, known flooding events that have affected Westmoreland County and its municipalities, resulting in property damages, are identified in Table 4.3.5-1. No injuries or fatalities



caused by flooding have been recorded in Westmoreland County. With flood documentation for the State of Pennsylvania being so extensive, not all sources have been identified or researched. Therefore, Table 4.3.5-1 may not include all events that have occurred throughout the County.

**Table 4.3.5-1. Flooding Events between 1950 and 2013 in Westmoreland County**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
June 5-7, 1968	Flooding - Severe Storm/Thunder Storm			\$3846.15 in property damages; \$384.62 in crop damages	SHELDUS
April 2, 1970	Flooding - Severe Storm/Thunder Storm			\$263.16 in property damages	SHELDUS
June 21-26, 1972	Flooding - Severe Storm/Thunder Storm (Tropical Storm Agnes)	DR-340	Y	\$7,462,686.57 in property damages; \$746,268.66 in crop damages	SHELDUS
July 9, 1985	Flooding			\$5,000 in property damages	SHELDUS
July 10, 1985	Flooding			\$2,500 in property damages	SHELDUS
July 15, 1985	Flooding			\$5,000 in property damages	SHELDUS
July 15, 1985	Flooding			\$5,000 in property damages	SHELDUS
November 5, 1985	Flooding	DR-754	Y	\$846,000 in property damages	SHELDUS
February 4, 1986	Flooding			\$500 in property damages	SHELDUS
July 8-9, 1986	Flooding			\$50,000 in property damages	SHELDUS
May 26, 1987	Flooding - Lightning			\$5,000 in property damages	SHELDUS
June 1, 1987	Flooding			\$5,000 in property damages	SHELDUS
June 22, 1987	Flooding			\$500 in property damages	SHELDUS
June 22, 1987	Flooding			\$500 in property damages	SHELDUS
November 2, 1987	Flooding			\$5,000 in property damages	SHELDUS
November 23, 1989	Flooding			\$50,000 in property damages	SHELDUS
November 23, 1989	Flooding			\$5,000 in property damages	SHELDUS
November 27, 1993	Flood/Flash Flood			\$500 in property damages	NOAA-NCDC



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
January 26, 1994	Flood/Flash Flood	DR-1015	Y	An ice jam on Loyalhanna Creek caused \$500 in property damages.	NOAA-NCDC
January 28-29, 1994	Flood/Flash Flood	DR-1015	Y	Widespread flooding was observed. An ice jam on Four Mile Run Creek in Ligonier Township resulted in flooding of several homes. An ice jam also caused flooding on Pierces Run Creek. 50 to 60 homes were evacuated along the swollen Youghiogheny River. About 40 of these homes sustained water damage. At Lock 4 on the Monongahela River the stage reached 32.8 feet; flood stage is 28 feet. \$500,000 in property damages.	NOAA-NCDC
June 25, 1995	Flood/Flash Flood			Small streams were out of their banks and roads flooded near Delmont and Export. Turtle Creek was out of its banks in Export, flooding 20 homes and a few businesses. \$2,000,000 in property damages.	NOAA-NCDC
July 17, 1995	Flood/Flash Flood			Flood waters covered roads in New Kensington and Arnold. \$25,000 in property damages.	NOAA-NCDC
January 19-21, 1996	Flash Flood	DR-1093	Y	Flash flooding caused extensive damage in Ligonier where the Loyalhanna and Mills Creeks converge. Several basements were also flooded across the County. Numerous other creeks went out of their banks and flooded roads. \$2.54 million in property damages.	NOAA-NCDC; SHELDUS
February 28, 1996	Flash Flood			Some basements and roads were flooded in Greensburg. \$5,000 in property damages.	NOAA-NCDC
June 19, 1996	Flash Flood	DR-1120	N	Flooding occurred along Pine Run near North Washington. \$3,000 in property damages.	NOAA-NCDC
July 19-20, 1996	Flood	DR-1130	N	\$12,750 in property damages	SHELDUS
November 8, 1996	Flash Flood			Flash floods occurred over mainly the northwest parts of Westmoreland County. \$8,000 in property damages.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
May 25-26, 1997	Flash Flood			Widespread 3 to 4-inch rainfall totals were common across the County. Numerous roads were flooded and several basements were flooded. 60-70 people were evacuated in the Darlington area. Evacuations were also ordered in Wilpen. Major road flooding was reported between Darlington and Ligonier. Numerous small streams and creeks went out of their banks. A large amount of runoff led to the flooding of the Conemaugh River at Seward. \$200,000 in property damages.	NOAA-NCDC
June 18, 1997	Flood			\$1,000 in property damages	NOAA-NCDC
July 1, 1997	Flash Flood			\$10,000 in property damages	NOAA-NCDC
November 7-8, 1997	Flash Flood			Widespread rainfall amounts of 3 to 4 inches were quite common throughout the County. Basements were flooded in Latrobe. Interstate 70 through South Huntingdon was flooded. A rock/mudslide covered a portion of Interstate 70 at the Smithton Bridge. Street flooding was reported in South Greensburg. Rt. 981 was closed due to flooding of the Loyalhanna Creek near Seward. Rt. 982 between Rt. 30 and Eaton Rd. in Latrobe was closed in Latrobe also because of the Loyalhanna Creek. Firefighters rescued a family of 3 when a car became partially submerged as Sewickley Creek overflowed onto Fairground Rd. near Youngwood. Water to 3 feet deep flowed across the road. Rt. 711 between New Florence and Seward was closed due to high water on the Conemaugh River and its tributaries. Numerous roads were flooded and 1 house was evacuated near Ligonier. \$40,000 in property damages.	NOAA-NCDC
June 2, 1998	Flash Flood	DR-1219	N	Street and basement flooding reported in Lower Burrell. \$20,000 in property damages.	NOAA-NCDC
June 15, 1998	Flash Flood			Minor stream flooding that closed Eaton Road and Hillview Avenue in Latrobe. Several basements also flooded in this area. A mudslide was reported on Beatty Road just southwest of Latrobe. \$20,000 in property damages.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
June 19, 1998	Flash Flood			Many flooded basements were reported across the area. Several roads were closed due to localized flooding, including State Highway 711 and Church Hollow Road. A mudslide occurred just east of Latrobe that forced the closing of U.S. Route 30. \$50,000 in property damages.	NOAA-NCDC
June 19, 1998	Flash Flood			Several small creeks flooded from thunderstorm rains. Many basements were flooded across the area. \$100,000 in property damages.	NOAA-NCDC; SHELDUS
April 9-10, 1999	Flash Flood			Thunderstorm rains produced several incidents of flash flooding across the County. In addition, many reports of basement flooding were received from across the County. \$50,000 in property damages.	NOAA-NCDC
July 28, 1999	Flash Flood			Storms produced torrential amounts of rainfall that flooded roadways, under-passes, and other low-lying areas, stranding several people in their cars. Several mud and rock slides were also reported. There were numerous reports of basement flooding across the region. \$2,000 in property damages.	NOAA-NCDC
February 19-20, 2000	Flood			\$1.25 million in property damages	SHELDUS
July 28, 2000	Flood			Heavy thunderstorms passing over western Pennsylvania produced rainfall of up to 2 inches in 1 hour over several counties, producing numerous instances of flash flooding. \$10,000 in property damages.	NOAA-NCDC
November 6, 2000	Flood			Street and roadway flooding was reported in the Irwin and South Greensburg areas. Flooding was also reported along Indian Head Creek in the Jones Mills area. \$5,000 in property damages.	NOAA-NCDC
November 6, 2000	Flood			Street and basement flooding was reported in the Irwin area. In Scottdale, some smaller tributaries of Jacobs Creek were flooding onto State Route 819, and widespread flash flooding problems were reported. \$20,000 in property damages.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
November 6-7, 2000	Flood			Widespread flash flooding was reported across Westmoreland County. State Emergency Management officials estimate that across the county, 2 homes were destroyed, 25 homes received major damage, 60 homes receive minor damage, 3 apartment buildings received minor damage, and 6 businesses were impacted. The American Red Cross estimated that around 40 families were forced from their homes by the flooding. \$500,000 in property damages.	NOAA-NCDC
November 4, 2001	Flood			Several reports of stream and basement flooding were received from the Town of Acme. \$50,000 in property damages.	NOAA-NCDC
March 26, 2002	Flood			\$10,625 in property damages	SHELDUS
May 9, 2002	Flood			Thunderstorm rains produced minor roadway flooding in the Scottdale area. \$5,000 in property damages.	NOAA-NCDC
July 2, 2002	Flood			Heavy thunderstorm rains produced minor street and basement flooding. \$10,000 in property damages.	NOAA-NCDC
July 27, 2002	Flood			Torrential thunderstorm rains produced numerous cases of minor roadway flooding. Some basement flooding was also reported. \$25,000 in property damages.	NOAA-NCDC
November 12, 2002	Flood			Torrential thunderstorm rains produced roadway and basement flooding in and around the Murrysville area. \$15,000 in property damages.	NOAA-NCDC
July 10, 2003	Flash Flood			Route 30 from Kingston eastward flooded and 20 families evacuated. A mud slide was reported near Idlewild Park, and another mud slide pushed a mobile home into Loyalhanna Creek. \$10,000 in property damages.	NOAA-NCDC
July 23, 2003	Flash Flood	DR-1485	N	A basement was flooded. \$2,000 in property damages.	NOAA-NCDC
July 23, 2003	Flash Flood	DR-1485	N	Flooding reported on Route 945 (Greensburg Road) and 67 (Chicago Avenue). Business institute was also flooded. \$5,000 in property damages.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
November 3, 2003	Flash Flood	DR-1485	N	Basement was flooded on Fairfield Street in Ligonier. Idlewild Park closed because of flooding. A bridge covered by water was impassable on Derbytown Road in Derry. \$5,000 in property damages.	NOAA-NCDC
November 6, 2003	Flash Flood	DR-1485	N	Route 981 at Latrobe-Derry Road was flooded, as was Ligonier St, in Ligonier. At least 2 basements suffered flood damage. \$10,000 in property damages.	NOAA-NCDC
November 12, 2003	Flash Flood	DR-1485	N	Many basements were flooded in Unity Twp. \$10,000 in property damages.	NOAA-NCDC
November 19, 2003	Flash Flood			Streams flooded roads, 60 houses, and basements on West Loyalhanna, South Fairfield, Walnut Street, and North Avenue. Local YMCA was flooded. 6 residents in Darlington evacuated due to high water. 2 people were stranded in cars. \$250,000 in property damages.	NOAA-NCDC
February 6-7, 2004	Flood			\$14,000 in property damages	SHELDUS
May 18, 2004	Flash Flood			Basements were flooded in Irwin and Greensburg. Roads were flooded. \$10,000 in property damages.	NOAA-NCDC
June 14, 2004	Flood			\$5,000 in property damages	SHELDUS
June 17-18, 2004	Flash Flood			Roads were washed out and basements were flooded. \$10,000 in property damages.	NOAA-NCDC
July 27, 2004	Flood	DR-1538		\$30,000 in property damages	SHELDUS
September 17-18, 2004	Flood (Tropical Depression Ivan)	DR-1557	Y	\$5 million in property damages	SHELDUS
January 6, 2005	Flood			\$45,000 in property damages	SHELDUS
June 28, 2005	Flash Flood			4 basements flooded in Latrobe and Youngstown. \$8,000 in property damages.	NOAA-NCDC
June 25, 2006	Flash Flood	DR-1649	N	A few basements flooded. \$7,000 in property damages.	NOAA-NCDC
June 8, 2007	Flash Flood			\$3,000 in property damages	NOAA-NCDC



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
July 5, 2007	Flash Flood			Water in homes and streets closed due to flash flooding. \$25,000 in property damages.	NOAA-NCDC
July 5, 2007	Flash Flood			Roads were closed in Avonmore with small streams out of their banks. \$25,000 in property damages.	NOAA-NCDC
November 6, 2007	Flash Flood			Law enforcement in Adamsburg reported water in homes due to flash flooding. \$25,000 in property damages.	NOAA-NCDC
November 6, 2007	Flash Flood			Flash flooding with water running into homes was reported in Grapeville. \$25,000 in property damages.	NOAA-NCDC
November 9, 2007	Flash Flood			\$10,000 in property damages	NOAA-NCDC
November 9, 2007	Flash Flood			Widespread flash flooding was reported in both Export and Murrysville areas. \$50,000 in property damages.	NOAA-NCDC
December 13, 2007	Flood			Minor flooding of small streams and roadways was reported. \$5,000 in property damages.	NOAA-NCDC
November 14, 2008	Flash Flood			Flash flooding was reported, with several roads flooded in Greensburg and Hempfield Townships. \$50,000 in property damages.	NOAA-NCDC
December 19-20, 2008	Flood			Flooding was reported along the Loyalhanna Creek near Latrobe. \$5,000 in property damages.	NOAA-NCDC
June 17-18, 2009	Flash Flood			Significant flash flooding occurred over eastern Allegheny and western Westmoreland counties in Pennsylvania with estimated damage of \$18 million to public infrastructure and private buildings. Widespread flash flooding occurred across much of western and central Westmorland County from Murrysville to Greensburg and Mount Pleasant. At least 1,192 buildings were affected, with 136 having major damage and 11 buildings destroyed. Most major roadways had flooding and some were closed well after the water receded to clear debris. \$9 million in property damages.	NOAA-NCDC
July 9, 2010	Flash Flood			Flash flooding was reported in New Kensington with Pucketa Creek flooding Seventh Street and closing the roadway. \$10,000 in property damages.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
May 13, 2011	Flood			\$20,000 in property damages	SHELDUS
May 15-16, 2011	Flood			\$15,000 in property damages	SHELDUS
July 28, 2011	Flood			Flooding occurred on Poplar Street. \$10,000 in property damages.	NOAA-NCDC
May 8, 2012	Flash Flood			Church basement was flooded in Greensburg. \$5,000 in property damages.	NOAA-NCDC
May 8, 2012	Flash Flood			Flooding of a personal care home was reported west of the airport. \$10,000 in property damages.	NOAA-NCDC
May 8, 2012	Flash Flood			Numerous roads were flooded in Hempfield Township. \$25,000 in property damages.	NOAA-NCDC
May 8, 2012	Flash Flood			Flooded homes were reported on 14th Street in Jeannette. \$50,000 in property damages.	NOAA-NCDC
May 8, 2012	Flash Flood			Flash flooding was reported across numerous roads and on private properties across the County. \$75,000 in property damages.	NOAA-NCDC
October 29-30, 2012	Flood (Hurricane Sandy)	DR-4099	N	Several roads and two bridges were flooded. \$190,000 in property damages.	NOAA-NCDC

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

DR Federal Disaster Declaration  
EM Federal Emergency Declaration  
FEMA Federal Emergency Management Agency

NCDC National Climate Data Center  
NOAA National Oceanic Atmospheric Administration  
SHELDUS Spatial Hazard Events and Losses Database for the U.S

Based on review of the CRREL database, Table 4.3.5-2 lists the ice-jam events that have occurred in the County between 1780 and 2013. Information regarding losses associated with these reported ice jams was limited.

**Table 4.3.5-2. Ice-Jam Events in Westmoreland County between 1780 and 2013**

Municipality	River	Jam Date	Water Year	Gage Number
West Newton	Youghiogheny River	2/1/1926	1926	Not identified
West Newton	Youghiogheny River	1/9/1931	1931	Not identified
West Newton	Youghiogheny River	3/12/1932	1932	Not identified
West Newton	Youghiogheny River	1/12/1933	1933	Not identified
West Newton	Youghiogheny River	2/19/1934	1934	Not identified
Sutersville	Youghiogheny River	12/25/1936	1937	3083500
Sutersville	Youghiogheny River	1/18/1940	1940	3083500
Sutersville	Youghiogheny River	12/25/1942	1943	3083500
Sutersville	Youghiogheny River	12/28/1943	1944	3083500
Sutersville	Youghiogheny River	1/27/1945	1945	3083500
Vandergrift	Kiskiminitas River	1/1/1946	1946	3048500
Murrysville	Abers Creek	1/1/1979	1979	3084000
Sutersville	Youghiogheny River	2/23/1979	1979	3083500
Sutersville	Youghiogheny River	2/1/1982	1982	3083500
Latrobe	Loyalhanna Creek	1/26/1994	1994	Not identified
Ligonier Township	Four Mile Run Creek	1/28/1994	1994	Not identified
Ligonier Township	Loyalhanna Creek	2/1/1996	1996	Not identified
Sutersville	Youghiogheny River	1/21/2003	2003	3083500
Smithton	Youghiogheny River	2/18/2003	2003	Not identified

Source: CRREL 2013

Note: Although many events were reported for Westmoreland County, information pertaining to every event was not easily ascertainable; therefore this table may not represent all ice jams in the County.

### National Flood Insurance Program

According to FEMA's 2002 National Flood Insurance Program (NFIP): Program Description, the U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968. The NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages being put in place. The NFIP collects and stores a vast quantity of information on insured structures, including the number and location of flood insurance policies, number of claims per insured property, dollar value of each claim and aggregate value of claims, repetitive flood loss properties, etc. NFIP data present a strong indication of the location of flood events among other indicators (NYSDPC 2008).

Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction and substantial improvements in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods (FEMA 2005).

There are three components to the NFIP: flood insurance, floodplain management, and flood hazard mapping. Nearly 20,000 communities across the United States and its territories participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. Flood damage is reduced by nearly \$1 billion each year through communities implementing sound floodplain management requirements and property owners purchasing flood insurance. Additionally, buildings constructed in compliance with NFIP building standards suffer approximately 80 percent less damages annually than those not built in compliance.

#### 4.3.5.4 Future Occurrence

Given the history of flood events that have impacted Westmoreland County, future flooding events of varying degrees are likely to occur. The fact that the elements required for flooding exist and that major flooding has occurred throughout the County in the past suggests that many people and properties are at risk from the flood hazard in the future.

A structure located within a 1-percent annual chance floodplain has a 26-percent chance of suffering flood damage during the term of a 30-year mortgage. As noted, Figure 4.3.5-3 illustrates the FEMA DFIRM 1-percent and 0.2-percent annual chance flood zones for Westmoreland County.

In Section 4.4, the identified hazards of concern for Westmoreland County were ranked for relative risk. The probability of occurrence, or likelihood of the event, is one parameter used for ranking hazards. Based on historical records, NFIP data, and the Pennsylvania State Hazard Mitigation Plan, the probability of occurrence for flood events in Westmoreland County is considered highly likely (100-percent annual probability). Section 4.4 includes further information on PEMA's risk factor methodology.

Annual flooding is anticipated in Westmoreland County. Some of the flooding events may induce secondary hazards such as water quality and supply concerns, infrastructure damage, deterioration and failure, utility failures, power outages, transportation delays/accidents/inconveniences, and public health and safety concerns.

#### 4.3.5.5 Vulnerability Assessment

To understand risk, a community must evaluate the assets that are exposed or vulnerable in the identified hazard area. For the flood hazard, the 1-percent annual chance event (100-year) is examined. The following sections evaluate and estimate the potential impact of flooding in Westmoreland County presenting specifically:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on life, health, and safety; general building stock; critical facilities; the economy; and future growth and development
- Further data collections that will assist understanding of this hazard over time

#### 4.3.5.5.1 Overview of Vulnerability

Flood is a significant concern for Westmoreland County. To assess vulnerability, potential losses were calculated for the County for 1-percent annual chance (100-year) mean return period (MRP) flood events. The flood hazard exposure and loss estimate analysis is presented below.

#### 4.3.5.5.2 Data and Methodology

The 1-percent annual chance flood event was examined to evaluate Westmoreland County's risk and vulnerability to the flood hazard. The polygons representing the 1-percent annual chance event from the Digital Flood Insurance Rate Map (DFIRM) and the 1/3 Arcsecond National Elevation Dataset were used with the HAZUS-MH enhanced quick look tool.

The HAZUS-MH model uses 2000 U.S. Census demographic data. These data were not updated for this analysis due to technical availability; however, the 2010 U.S. Census data were used to estimate population exposure to provide the best available output. Figure 4.3.5-3 illustrates the flood boundaries used for this vulnerability assessment.

#### 4.3.5.5.3 Impact on Life, Health, and Safety

The impact of flooding on life, health and safety is dependent upon several factors including the severity of the event and whether or not adequate warning time is provided to residents. Exposure represents the population living in or near floodplain areas that could be impacted should a flood event occur. Additionally, exposure should not be limited to only those who reside in a defined hazard zone, but everyone who may be affected by the effects of a hazard event (e.g., people are at risk while traveling in flooded areas, or their access to emergency services is compromised during an event). The degree of that impact will vary and is not strictly measurable.

Table 4.3.5-3 lists the estimated population located within the 1-percent annual chance flood zone by municipality. To estimate the population exposed to the 1-percent flood event, the FEMA DFIRM floodplain boundaries were overlaid upon the 2010 U.S. Census population data in Geographic Information Systems (GIS) (U.S. Census 2010). Census blocks do not follow the boundaries of the floodplain. The 2010 Census blocks with their centroid the flood boundaries were used to calculate the estimated population exposed to this hazard. Using this approach, 9,188 people are estimated to be within the 1-percent annual chance floodplain, or 2.5 percent of the total County population.

**Table 4.3.5-3. Estimated Westmoreland County Population Vulnerable to the 1-Percent Flood Hazard (2010 Census)**

Municipality	Total Population	1-Percent Annual Chance Event	
		Population in SFHA	Percent Population in Boundary
Adamsburg Borough	172	-	0.0%
Allegheny Township	8,164	106	1.3%
Arnold, City of	5,157	-	0.0%
Arona Borough	370	-	0.0%
Avonmore Borough	1,011	-	0.0%
Bell Township	2,348	49	2.1%

## SECTION 4.3.4: RISK ASSESSMENT – FLOOD

Municipality	Total Population	1-Percent Annual Chance Event	
		Population in SFHA	Percent Population in Boundary
Bolivar Borough	465	65	14.0%
Cook Township	2,250	118	5.2%
Delmont Borough	2,686	13	0.5%
Derry Borough	2,688	491	18.3%
Derry Township	14,502	339	2.3%
Donegal Borough	120	-	0.0%
Donegal Township	2,403	108	4.5%
East Huntingdon Township	7,963	349	4.4%
East Vandergrift Borough	674	5	0.7%
Export Borough	917	33	3.6%
Fairfield Township	2,424	20	0.8%
Greensburg, City of	14,892	21	0.1%
Hempfield Township	43,241	1,175	2.7%
Hunker Borough	291	11	3.8%
Hyde Park Borough	500	-	0.0%
Irwin Borough	3,973	-	0.0%
Jeannette, City of	9,654	220	2.3%
Latrobe, City of	8,338	300	3.6%
Laurel Mountain Borough	167	3	1.8%
Ligonier Borough	1,573	210	13.4%
Ligonier Township	6,603	565	8.6%
Lower Burrell, City of	11,761	24	0.2%
Loyalhanna Township	2,382	-	0.0%
Madison Borough	397	-	0.0%
Manor Borough	3,239	130	4.0%
Monessen City	7,720	6	0.1%
Mt. Pleasant Borough	4,454	6	0.1%
Mt. Pleasant Township	10,911	162	1.5%
Municipality of Murrysville	20,079	149	0.7%
New Alexandria Borough	560	78	13.9%
New Florence Borough	689	93	13.5%
New Kensington, City of	13,116	206	1.6%
New Stanton Borough	2,173	40	1.8%
North Belle Vernon Borough	1,971	-	0.0%
North Huntingdon Township	30,609	546	1.8%
North Irwin Borough	846	-	0.0%
Oklahoma Borough	809	-	0.0%
Penn Borough	475	116	24.4%
Penn Township	20,005	524	2.6%
Rostraver Township	11,363	364	3.2%



Municipality	Total Population	1-Percent Annual Chance Event	
		Population in SFHA	Percent Population in Boundary
Salem Township	6,623	38	0.6%
Scottdale Borough	4,384	131	3.0%
Seward Borough	495	39	7.9%
Sewickley Township	5,996	177	3.0%
Smithton Borough	399	86	21.6%
South Greensburg Borough	2,117	-	0.0%
South Huntingdon Township	5,796	212	3.7%
Southwest Greensburg Borough	2,155	16	0.7%
St. Clair Township	1,518	162	10.7%
Sutersville Borough	605	149	24.6%
Trafford Borough	3,113	65	2.1%
Unity Township	22,607	644	2.8%
Upper Burrell Township	2,326	34	1.5%
Vandergrift Borough	5,205	-	0.0%
Washington Township	7,422	94	1.3%
West Leechburg Borough	1,294	-	0.0%
West Newton Borough	2,633	565	21.5%
Youngstown Borough	326	102	31.3%
Youngwood Borough	3,050	29	1.0%
<b>WESTMORELAND COUNTY (TOTAL)</b>	<b>365,169</b>	<b>9,188</b>	<b>2.5%</b>

Source: U.S. Census 2010

Notes: SFHA = Special Flood Hazard Area

Of the population exposed, the most vulnerable include the economically disadvantaged and the population over the age of 65. Economically disadvantaged populations are more vulnerable because they are likely to evaluate their risk and make decisions to evacuate based on the net economic impact to their family. The population over the age of 65 is also more vulnerable because they are more likely to seek or need medical attention that may not be available because of isolation during a flood event, and they may have more difficulty evacuating.

Using 2010 U.S. Census data, HAZUS-MH 2.1 estimates the potential sheltering needs based on a 1-percent chance flood event. For the 1-percent flood event, HAZUS-MH 2.1 estimates 34,260 households will be displaced and 14,380 people will seek short-term sheltering, representing approximately 4 percent of the Westmoreland County population seeking short-term shelter. These statistics, by municipality, are presented in Table 4.3.5-4.

**Table 4.3.5-4. Estimated Population Displaced or Seeking Short-Term Shelter from the 1-Percent Annual Chance Flood Event**

Municipality	Total Population (2010 U.S. Census)	1-Percent Annual Chance Event	
		Displaced Households	Persons Seeking Short- Term Sheltering
Adamsburg Borough	172	-	-
Allegheny Township	8,164	780	189
Arnold, City of	5,157	2	-
Arona Borough	370	26	3
Avonmore Borough	1,011	-	-
Bell Township	2,348	3	-
Bolivar Borough	465	122	6
Cook Township	2,250	69	44
Delmont Borough	2,686	120	15
Derry Borough	2,688	16	3
Derry Township	14,502	754	320
Donegal Borough	120	-	-
Donegal Township	2,403	2,420	1,148
East Huntingdon Township	7,963	315	95
East Vandergrift Borough	674	23	10
Export Borough	917	132	26
Fairfield Township	2,424	306	18
Greensburg, City of	14,892	826	154
Hempfield Township	43,241	8,400	2,968
Hunker Borough	291	17	1
Hyde Park Borough	500	10	2
Irwin Borough	3,973	98	20
Jeannette, City of	9,654	1,004	360
Latrobe, City of	8,338	756	574
Laurel Mountain Borough	167	5	-
Ligonier Borough	1,573	202	136
Ligonier Township	6,603	701	292
Lower Burrell, City of	11,761	936	597
Loyalhanna Township	2,382	56	2
Madison Borough	397	-	-
Manor Borough	3,239	98	24
Monessen City	7,720	5	-
Mt. Pleasant Borough	4,454	38	10
Mt. Pleasant Township	10,911	2,088	664
Municipality of Murrysville	20,079	980	378

Municipality	Total Population (2010 U.S. Census)	1-Percent Annual Chance Event	
		Displaced Households	Persons Seeking Short- Term Sheltering
New Alexandria Borough	560	66	49
New Florence Borough	689	170	86
New Kensington, City of	13,116	873	603
New Stanton Borough	2,173	243	69
North Belle Vernon Borough	1,971	14	2
North Huntingdon Township	30,609	1,869	1,017
North Irwin Borough	846	-	-
Oklahoma Borough	809	1	-
Penn Borough	475	70	19
Penn Township	20,005	1,092	384
Rostraver Township	11,363	1,254	564
Salem Township	6,623	219	34
Scottdale Borough	4,384	136	61
Seward Borough	495	63	33
Sewickley Township	5,996	372	147
Smithton Borough	399	74	16
South Greensburg Borough	2,117	146	36
South Huntingdon Township	5,796	328	150
Southwest Greensburg Borough	2,155	13	1
St. Clair Township	1,518	627	288
Sutersville Borough	605	203	118
Trafford Borough	3,113	78	14
Unity Township	22,607	2,835	1,662
Upper Burrell Township	2,326	68	6
Vandergrift Borough	5,205	24	6
Washington Township	7,422	292	44
West Leechburg Borough	1,294	2	-
West Newton Borough	2,633	1,348	806
Youngstown Borough	326	18	2
Youngwood Borough	3,050	82	44
<b>WESTMORELAND COUNTY (TOTAL)</b>	<b>365,169</b>	<b>34,260</b>	<b>14,380</b>

Source: HAZUS-MH 2.1

Note: The population displaced and seeking shelter was calculated using 2000 U.S. Census data (HAZUS-MH 2.1 default demographic data).

The total number of injuries and casualties resulting from typical riverine flooding is generally limited because of advance weather forecasting, blockades, and warnings. Therefore, injuries and deaths generally are not anticipated if proper warning and precautions are in place. Ongoing mitigation efforts should help to avoid the most likely causes of injury, which results from persons trying to cross flooded

roadways or channels. Mitigation action items addressing this issue are included in Section 9 (Mitigation Strategies) of this Plan.

Warning time for flash flooding is often limited. Flash flood events are frequently associated with other natural hazard events such as earthquakes, landslides, or severe weather, which limits their predictability and compounds the hazard. Populations without adequate warning of the event are highly vulnerable to this hazard. Ongoing mitigation efforts including dissemination and early warning systems noted in Section 6 (Mitigation Strategy) of this plan should help to avoid the most likely cause of injury, which results from persons trying to cross flooded roadways or channels during a flood event.

#### 4.3.5.5.4 Impact on General Building Stock

After considering the population exposed and vulnerable to the flood hazard, the built environment was evaluated. Exposure in the flood zone includes those buildings located in the flood zone. Potential damage is the modeled loss that could occur to the exposed inventory, including structural and content value.

The total land area located in the 1-percent annual chance flood zones was calculated for each municipality, as presented in Table 4.3.5-5 below.

**Table 4.3.5-5. Total Land Area Located in the 1-Percent Annual Chance Flood Zones (acres)**

Municipality	Total Area (acres)	1% Flood Event	
		A-Zone Area Exposed (acres)	Percentage of Total Land in A-Zone
Adamsburg Borough	179	-	0%
Allegheny Township	20,417	1,089	5%
Arnold, City of	530	73	14%
Arona Borough	336	27	8%
Avonmore Borough	1,019	94	9%
Bell Township	14,033	850	6%
Bolivar Borough	114	28	25%
Cook Township	29,848	1,103	4%
Delmont Borough	676	2	0%
Derry Borough	511	62	12%
Derry Township	61,619	4,224	7%
Donegal Borough	146	-	0%
Donegal Township	31,768	951	3%
East Huntingdon Township	21,120	871	4%
East Vandergrift Borough	97	24	25%
Export Borough	259	31	12%
Fairfield Township	39,417	1,286	3%
Greensburg, City of	2,597	46	2%
Hempfield Township	49,199	1,736	4%
Hunker Borough	162	9	6%
Hyde Park Borough	192	50	26%
Irwin Borough	537	13	3%

## SECTION 4.3.4: RISK ASSESSMENT – FLOOD

Municipality	Total Area (acres)	1% Flood Event	
		A-Zone Area Exposed (acres)	Percentage of Total Land in A-Zone
Jeannette, City of	1,533	63	4%
Latrobe, City of	1,471	198	13%
Laurel Mountain Borough	81	3	3%
Ligonier Borough	324	76	23%
Ligonier Township	59,510	3,124	5%
Lower Burrell, City of	7,389	461	6%
Loyalhanna Township	14,281	1,446	10%
Madison Borough	279	-	0%
Manor Borough	1,226	77	6%
Monessen City	1,943	134	7%
Mt. Pleasant Borough	642	11	2%
Mt. Pleasant Township	35,866	1,614	5%
Municipality of Murrysville	23,585	642	3%
New Alexandria Borough	543	100	18%
New Florence Borough	209	36	17%
New Kensington, City of	2,708	301	11%
New Stanton Borough	2,579	125	5%
North Belle Vernon Borough	270	10	4%
North Huntingdon Township	17,457	727	4%
North Irwin Borough	129	0	0%
Oklahoma Borough	419	38	9%
Penn Borough	96	17	18%
Penn Township	19,701	459	2%
Rostraver Township	21,097	1,076	5%
Salem Township	30,492	1,412	5%
Scottdale Borough	780	101	13%
Seward Borough	129	6	5%
Sewickley Township	17,235	1,095	6%
Smithton Borough	76	35	46%
South Greensburg Borough	453	22	5%
South Huntingdon Township	29,292	1,389	5%
Southwest Greensburg Borough	250	19	8%
St. Clair Township	18,181	1,655	9%
Sutersville Borough	193	62	32%
Trafford Borough	778	98	13%
Unity Township	43,239	1,762	4%
Upper Burrell Township	9,698	171	2%
Vandergrift Borough	921	79	9%
Washington Township	21,025	1,059	5%
West Leechburg Borough	649	45	7%
West Newton Borough	717	205	29%

Municipality	Total Area (acres)	1% Flood Event	
		A-Zone Area Exposed (acres)	Percentage of Total Land in A-Zone
Youngstown Borough	71	4	5%
Youngwood Borough	1,233	84	7%
<b>WESTMORELAND COUNTY (TOTAL)</b>	<b>663,526</b>	<b>32,613</b>	<b>5%</b>

Source: FEMA DFIRM

Notes:

The area represented includes the area of inclusive water bodies.

% = Percent

sq.mi. = Square miles;

To provide a general estimate of the number of structures and structural/content replacement value exposure, the FEMA DFIRM flood boundaries (1-percent flood zone) was overlaid upon Westmoreland County's building footprint. The structures with their centroid the boundaries were totaled for each municipality; building stock exposure per municipality is presented in Table 4.3.5-6.

Approximately 7,198 structures are located in the 1-percent annual chance floodplain in Westmoreland County. This represents 3 percent of all structures located in the planning area (259,616 in total).

Using the default general building stock in HAZUS-MH, the replacement cost values of the Census blocks with their centroid in the floodplain were totaled. Approximately \$1.7 million worth of building/contents exposed are to the 1-percent annual chance flood in Westmoreland County. This represents approximately 3.8 percent of the County's total general building stock replacement value inventory (\$45.7 billion).

The potential damage estimated to the general building stock inventory associated with the 1-percent annual chance flood is greater than \$827 million. Building stock potential loss estimates per municipality are presented in Table 4.3.5-7.



*Table 4.3.5-6 Estimated General Building Stock Exposure to the 1-Percent Annual Chance Flood Event*

Municipality	Total Number of Buildings*	Total RCV**	1% Annual Chance Flood Boundary			
			Number of Buildings*	% of Total	RCV**	% of Total
Adamsburg Borough	172	25,285,000	0	0%	0	0.0%
Allegheny Township	5992	860,144,000	104	2%	50,247	5.8%
Arnold, City of	3179	682,035,000	1	0%	0	0.0%
Arona Borough	363	34,487,000	7	2%	0	0.0%
Avonmore Borough	863	194,040,000	1	0%	0	0.0%
Bell Township	2431	223,407,000	36	1%	771	0.3%
Bolivar Borough	384	42,361,000	44	11%	5,683	13.4%
Cook Township	2716	216,107,000	224	8%	10,652	4.9%
Delmont Borough	1378	356,649,000	2	0%	0	0.0%
Derry Borough	1658	249,190,000	216	13%	41,945	16.8%
Derry Township	14776	1,351,636,000	251	2%	114,842	8.5%
Donegal Borough	141	15,051,000	0	0%	0	0.0%
Donegal Township	3184	268,860,000	74	52%	24,611	9.2%
East Huntingdon Township	7384	789,027,000	156	2%	11,000	1.4%
East Vandergrift Borough	605	66,892,000	16	3%	0	0.0%
Export Borough	594	151,365,000	32	5%	17,892	11.8%
Fairfield Township	2897	200,613,000	106	4%	3,363	1.7%
Greensburg, City of	6990	2,648,084,000	54	1%	13,552	0.5%
Hempfield Township	28124	4,444,319,000	490	2%	69,849	1.6%
Hunker Borough	272	32,319,000	6	2%	1,322	4.1%
Hyde Park Borough	390	138,823,000	3	1%	1,514	1.1%
Irwin Borough	1684	575,893,000	14	1%	21,757	3.8%
Jeannette, City of	5963	1,345,868,000	134	2%	26,591	2.0%
Latrobe, City of	5354	1,405,181,000	61	1%	26,844	1.9%
Laurel Mountain Borough	109	37,097,000	2	2%	573	1.5%

## SECTION 4.3.4: RISK ASSESSMENT – FLOOD

Municipality	Total Number of Buildings*	Total RCV**	1% Annual Chance Flood Boundary			
			Number of Buildings*	% of Total	RCV**	% of Total
Ligonier Borough	1083	294,943,000	143	13%	32,934	11.2%
Ligonier Township	7018	1,186,877,000	907	13%	58,235	4.9%
Lower Burrell, City of	7104	1,494,023,000	93	1%	25,909	1.7%
Loyalhanna Township	2295	169,516,000	9	0%	4,022	2.4%
Madison Borough	352	75,888,000	0	0%	0	0.0%
Manor Borough	1471	302,731,000	36	2%	14,791	4.9%
Monessen City	5542	921,147,000	28	1%	9,408	1.0%
Mt. Pleasant Borough	2448	1,048,779,000	6	0%	3,226	0.3%
Mt. Pleasant Township	9532	1,336,531,000	162	2%	50,789	3.8%
Municipality of Murrysville	10520	2,745,052,000	149	1%	20,869	0.8%
New Alexandria Borough	466	103,270,000	0	0%	15,905	15.4%
New Florence Borough	595	66,297,000	40	7%	6,660	10.0%
New Kensington, City of	7799	2,046,442,000	168	2%	42,199	2.1%
New Stanton Borough	1478	314,433,000	26	2%	9,347	3.0%
North Belle Vernon Borough	1406	261,957,000	0	0%	2,926	1.1%
North Huntingdon Township	17074	3,456,071,000	200	1%	36,936	1.1%
North Irwin Borough	448	62,678,000	0	0%	0	0.0%
Oklahoma Borough	617	90,674,000	6	1%	0	0.0%
Penn Borough	366	37,791,000	79	22%	4,979	13.2%
Penn Township	11646	2,295,983,000	117	1%	81,166	3.5%
Rostraver Township	9800	1,159,231,000	439	4%	30,834	2.7%
Salem Township	6807	1,184,469,000	44	1%	11,796	1.0%
Scottdale Borough	2898	772,590,000	129	4%	134,623	17.4%
Seward Borough	417	59,865,000	32	8%	3,301	5.5%
Sewickley Township	6200	516,244,000	296	5%	24,602	4.8%
Smithton Borough	329	147,713,000	72	22%	78,184	52.9%

Municipality	Total Number of Buildings*	Total RCV**	1% Annual Chance Flood Boundary			
			Number of Buildings*	% of Total	RCV**	% of Total
South Greensburg Borough	1444	369,766,000	14	1%	3,834	1.0%
South Huntingdon Township	8134	530,761,000	559	7%	19,902	3.7%
Southwest Greensburg Borough	1388	313,935,000	37	3%	3,496	1.1%
St. Clair Township	1433	101,946,000	121	8%	13,776	13.5%
Sutersville Borough	511	62,288,000	171	33%	20,750	33.3%
Trafford Borough	1617	557,686,000	37	2%	2,660	0.5%
Unity Township	14818	2,639,193,000	406	3%	384,730	14.6%
Upper Burrell Township	2104	302,170,000	65	3%	9,095	3.0%
Vandergrift Borough	3491	539,820,000	3	0%	0	0.0%
Washington Township	6249	689,234,000	109	2%	8,539	1.2%
West Leechburg Borough	958	131,996,000	0	0%	0	0.0%
West Newton Borough	1881	317,727,000	430	23%	103,322	32.5%
Youngstown Borough	289	53,155,000	4	1%	15,185	28.6%
Youngwood Borough	1986	538,819,000	27	1%	4,622	0.9%
<b>WESTMORELAND COUNTY (TOTAL)</b>	<b>259616</b>	<b>45,654,424,000</b>	<b>7,198</b>	<b>3%</b>	<b>1,736,560</b>	<b>3.8%</b>

Source: Westmoreland County 2013; HAZUS-MH v2.1

Notes:

\*Based on the centroid of the building footprints provided by Westmoreland County.

\*\* Based on the HAZUS-MH v2.1 default general building stock inventory.

% = Percent

RCV = Replacement cost value (structure and contents)

**Table 4.3.5-7. Estimated General Building Stock Potential Loss to the 1-Percent Annual Chance Flood Event**

Municipality	Total RCV	1% Annual Chance Flood Boundary			
		Number of Buildings	% of Total	Loss	% of Total
Adamsburg Borough	25,285,000	0	0%	-	0.0%
Allegheny Township	860,144,000	104	2%	11,760,000	1.4%
Arnold, City of	682,035,000	1	0%	2,113,000	0.3%
Arona Borough	34,487,000	7	2%	828,000	2.4%
Avonmore Borough	194,040,000	1	0%	365,000	0.2%
Bell Township	223,407,000	36	1%	1,930,000	0.9%
Bolivar Borough	42,361,000	44	11%	2,779,000	6.6%
Cook Township	216,107,000	224	8%	4,971,000	2.3%
Delmont Borough	356,649,000	2	0%	1,068,000	0.3%
Derry Borough	249,190,000	216	13%	13,311,000	5.3%
Derry Township	1,351,636,000	251	2%	43,409,000	3.2%
Donegal Borough	15,051,000	0	0%	-	0.0%
Donegal Township	268,860,000	74	52%	2,926,000	1.1%
East Huntingdon Township	789,027,000	156	2%	4,926,000	0.6%
East Vandergrift Borough	66,892,000	16	3%	414,000	0.6%
Export Borough	151,365,000	32	5%	10,403,000	6.9%
Fairfield Township	200,613,000	106	4%	2,986,000	1.5%
Greensburg, City of	2,648,084,000	54	1%	6,263,000	0.2%
Hempfield Township	4,444,319,000	490	2%	41,305,000	0.9%
Hunker Borough	32,319,000	6	2%	730,000	2.3%
Hyde Park Borough	138,823,000	3	1%	342,000	0.2%
Irwin Borough	575,893,000	14	1%	4,849,000	0.8%
Jeannette, City of	1,345,868,000	134	2%	13,799,000	1.0%
Latrobe, City of	1,405,181,000	61	1%	32,132,000	2.3%
Laurel Mountain Borough	37,097,000	2	2%	372,000	1.0%

Municipality	Total RCV	1% Annual Chance Flood Boundary			
		Number of Buildings	% of Total	Loss	% of Total
Ligonier Borough	294,943,000	143	13%	7,178,000	2.4%
Ligonier Township	1,186,877,000	907	13%	32,640,000	2.8%
Lower Burrell, City of	1,494,023,000	93	1%	19,107,000	1.3%
Loyalhanna Township	169,516,000	9	0%	658,000	0.4%
Madison Borough	75,888,000	0	0%	-	0.0%
Manor Borough	302,731,000	36	2%	10,976,000	3.6%
Monessen City	921,147,000	28	1%	2,749,000	0.3%
Mt. Pleasant Borough	1,048,779,000	6	0%	1,908,000	0.2%
Mt. Pleasant Township	1,336,531,000	162	2%	29,648,000	2.2%
Municipality of Murrysville	2,745,052,000	149	1%	46,674,000	1.7%
New Alexandria Borough	103,270,000	0	0%	6,410,000	6.2%
New Florence Borough	66,297,000	40	7%	1,930,000	2.9%
New Kensington, City of	2,046,442,000	168	2%	21,613,000	1.1%
New Stanton Borough	314,433,000	26	2%	5,047,000	1.6%
North Belle Vernon Borough	261,957,000	0	0%	915,000	0.3%
North Huntingdon Township	3,456,071,000	200	1%	36,666,000	1.1%
North Irwin Borough	62,678,000	0	0%	908,000	1.4%
Oklahoma Borough	90,674,000	6	1%	38,000	0.0%
Penn Borough	37,791,000	79	22%	2,072,000	5.5%
Penn Township	2,295,983,000	117	1%	18,083,000	0.8%
Rostraver Township	1,159,231,000	439	4%	23,534,000	2.0%
Salem Township	1,184,469,000	44	1%	100,698,000	8.5%
Scottdale Borough	772,590,000	129	4%	23,224,000	3.0%
Seward Borough	59,865,000	32	8%	1,241,000	2.1%
Sewickley Township	516,244,000	296	5%	12,913,000	2.5%
Smithton Borough	147,713,000	72	22%	18,154,000	12.3%

Municipality	Total RCV	1% Annual Chance Flood Boundary			
		Number of Buildings	% of Total	Loss	% of Total
South Greensburg Borough	369,766,000	14	1%	4,378,000	1.2%
South Huntingdon Township	530,761,000	559	7%	10,620,000	2.0%
Southwest Greensburg Borough	313,935,000	37	3%	2,427,000	0.8%
St. Clair Township	101,946,000	121	8%	6,461,000	6.3%
Sutersville Borough	62,288,000	171	33%	9,198,000	14.8%
Trafford Borough	557,686,000	37	2%	21,425,000	3.8%
Unity Township	2,639,193,000	406	3%	88,226,000	3.3%
Upper Burrell Township	302,170,000	65	3%	4,859,000	1.6%
Vandergrift Borough	539,820,000	3	0%	725,000	0.1%
Washington Township	689,234,000	109	2%	5,120,000	0.7%
West Leechburg Borough	131,996,000	0	0%	128,000	0.1%
West Newton Borough	317,727,000	430	23%	36,982,000	11.6%
Youngstown Borough	53,155,000	4	1%	862,000	1.6%
Youngwood Borough	538,819,000	27	1%	6,775,000	1.3%
<b>WESTMORELAND COUNTY (TOTAL)</b>	<b>45,654,424,000</b>	<b>7,198</b>	<b>3%</b>	<b>827,151,000</b>	<b>1.8%</b>

Source: HAZUS-MH v2.1

Notes:

% = Percent

RCV = Replacement cost value



In addition to total building stock modeling, individual data available on flood policies, claims, repetitive loss properties (RLP) and severe repetitive loss (SRL) properties were analyzed. According to section 1361A of the National Flood Insurance Act (NFIA), as amended, 42 U.S.C. 4102a, an SRL property is defined as a residential property that is covered under an NFIP flood insurance policy and can claim at least one of the following:

- Has at least four NFIP claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000
- For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building

For both of the above, at least two of the referenced claims must have occurred within a 10-year period, and must be greater than 10 days apart.

An RLP is defined by FEMA as an NFIP-insured structure that incurred flood-related damage on 2 occasions, in which the cost of repair equaled or exceeded 25 percent of the market value of the structure at the time of each such flood.

Table 4.3.5-8 summarizes the FEMA occupancy classes of the RLPs and SRL properties in Westmoreland County. Table 4.3.5-9 summarizes the NFIP policies, claims, and repetitive loss statistics for Westmoreland County. The majority of the repetitive loss occupancy class is single-family residences (75 percent). The majority of severe repetitive loss occupancy class is also single-family residences (100 percent) (PEMA 2014).

**Table 4.3.5-8. Occupancy Class of Repetitive Loss Structures in Westmoreland County**

Occupancy Class	Repetitive Loss Properties	Severe Repetitive Loss Properties	Total
Single Family	6	2	8
Non Residential	2	-	2

Source: PEMA 2014

Statistics provided by the PEMA State Hazard Mitigation Officer, and are current as of 4/29/14.

The location of the properties with policies, claims, and repetitive and severe repetitive flooding were geocoded by FEMA with the understanding that there are varying tolerances between how closely the longitude and latitude coordinates correspond to the location of the property address, or that the indication of some locations are more accurate than others. Figure 4.3.5-4 indicates the repetitive loss areas within the County. NFIP policies and claims are cataloged at FEMA.

*Table 4.3.5-9 NFIP Policies, Claims, and Repetitive Loss Statistics*

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop.
Adamsburg Borough	-	-	-	-	-
Allegheny Township	36		\$ 600,982.15	-	-
Arnold, City of	-	2	\$ 2,751.00	-	-
Arona Borough	-	2	\$ -	-	-
Avonmore Borough	5	8	\$ 39,127.84	-	-
Bell Township	-	-		-	-
Bolivar Borough	3	2	\$ 2,746.19	-	-
Cook Township	26	11	\$ 39,741.78	-	-
Delmont Borough	5	4	\$ 11,989.43	-	-
Derry Borough	43	2	\$ 1,988.08	-	-
Derry Township	33	8	\$ 42,544.72	-	-
Donegal Borough	-	-	-	-	-
Donegal Township	7	2	\$ 17,943.44	-	-
East Huntingdon Township	12	10	\$ 71,787.86	-	-
East Vandergrift Borough	4			-	-
Export Borough	5	8	\$ 103,138.90	-	-
Fairfield Township	12	2	\$ -	-	-
Greensburg, City of	23	44	\$ 450,809.56	-	-
Hempfield Township	147	134	\$ 700,962.98	-	-
Hunker Borough	2			-	-
Hyde Park Borough		1	\$ 669.75	-	-
Irwin Borough	12	8	\$ 28,867.34	-	-
Jeannette, City of	20	54	\$ 435,520.81	-	-
Latrobe, City of	27	20	\$ 281,662.01	-	-
Laurel Moutain Borough	1	-		-	-
Ligonier Borough	52	42	\$ 297,192.80	1	
Ligonier Township	166	0	\$ 1,291,443.05	4	1
Lower Burrell, City of	16	21	\$ 466,978.44	1	
Loyalhanna Township	-	1	\$ 61.50	-	-
Madison Borough	-	-		-	-
Manor Borough	11	12	\$ 2,841,179.32	1	

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop.
Monessen City	7	10	\$ 19,053.31	-	-
Mt. Pleasant Borough	1	2	\$ 219.04	-	-
Mt. Pleasant Township	21	7	\$ 17,623.19	-	-
Municipality of Murrysville	72	34	\$ 799,000.56	1	-
New Alexandria Borough	-	-	-	-	-
New Florence Borough	14	2	\$ -	-	-
New Kensington, City of	45	55	\$ 347,635.66	-	-
New Stanton Borough	2	1	\$ 5,672.24	-	-
North Belle Vernon Borough	1	-	-	-	-
North Huntingdon Township	88	31	\$ 268,863.17	-	-
North Irwin Borough				-	-
Oklahoma Borough				-	-
Penn Borough	14	6	\$ 72,814.41	-	-
Penn Township	54	27	\$ 329,336.64	-	-
Rostraver Township	55	35	\$ 257,009.59	-	-
Salem Township	9	2	\$ 7,844.03	-	-
Scottdale Borough	24	35	\$ 32,563.92	-	-
Seward Borough	6	1	\$ 901.68	-	-
Sewickley Township	35	40	\$ 308,659.44	-	-
Smithton Borough	15	11	\$ 31,356.80	-	-
South Greensburg Borough	6	2	\$ 28,910.02	-	-
South Huntingdon Township	32	27	\$ 144,301.96	-	-
Southwest Greensburg Borough	6	2	\$ 1,906.31	-	-
St. Clair Township	11	1	\$ -	-	-
Sutersville Borough	30	31	\$ 107,479.53	-	-
Trafford Borough				-	-
Unity Township	78	98	\$ 819,394.66	-	1
Upper Burrell Township	10	4	\$ 9,259.55	-	-
Vandergrift Borough	5	3	\$ 58,172.83	-	-
Washington Township	16	7	\$ 10,929.88	-	-
West Leechburg Borough				-	-
West Newton Borough	95	66	\$ 280,161.63	-	-
Youngstown Borough		2	\$ 2,436.46	-	-
Youngwood Borough	13	10	\$ 537,973.75	-	-

Source: PEMA, 2014

Notes:

- (1) Policies, claims, repetitive loss, and severe repetitive loss statistics provided by PEMA, and are current as of 4/29/14. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by XXX.
- (2) Total building and content loss information was collected from the claims file provided by FEMA.

#### 4.3.5.5.5 Impact on Critical Facilities

In addition to considering general building stock at risk, the risk of flood to critical facilities, utilities, and user-defined facilities was evaluated. HAZUS-MH was used to estimate the flood loss potential to critical facilities exposed to the flood risk. Using depth/damage function curves, HAZUS estimates the percent of damage to the building and contents of critical facilities. Table 4.3.5-10 lists the critical facilities and utilities located in the FEMA flood zones and the percent damage HAZUS-MH 2.1 estimates to the facility as a result of a 1-percent annual chance event. The facilities' names are listed as they appear in the County's database; they may be truncated.

In cases where short-term functionality is impacted by a hazard, other facilities of neighboring municipalities may need to increase support response functions during a disaster event. Mitigation planning should consider means to reduce impact to critical facilities and ensure that sufficient emergency and school services remain when a significant event occurs. Actions addressing shared services agreements are included in Section 6 (Mitigation Strategy) of this Plan.

**Table 4.3.5-10 Critical Facilities Located in the 1-Percent Annual Chance Flood Boundary and Estimated Potential Damage**

Name	Municipality	Type	Exposure	Potential Loss from 1% Flood Event		
			1% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent <sup>(1)</sup>
Linn Run State Park	Cook	Park Ranger	X	41.07	100	900
Derry Borough Police	Derry	Police	X	23.89	98.45	720
Derry Borough Fire	Derry	Fire	X	23.89	98.45	720
Keystone State Park	Derry Township	Park Ranger	X	88	100	900
Millwood/E. Derry	Derry Township	Fire	X	28.67	100	720
Hannastown	Hempfield	Fire	X	13.47	62.33	630
Lower Burrell #2	Lower Burrell	Fire	X	14.45	67.26	630
Manor Police	Manor	Police	X	49.22	100	900
New Florence	New Florence	Fire	X	6.89	7.88	480
Rostraver Twp.	Rostraver	Police	X	38.18	100	720
Smithton	Smithton	Fire	X	10.34	26.13	480
W. Newton Police	West Newton	Police	X	11.13	40.13	480
West Newton	West Newton	Fire	X	11.81	51.84	480

Source: HAZUS-MH 2.1

Notes: x = Facility located within the DFIRM boundary.

- = No results generated in HAZUS.

Wells are assumed to have electrical equipment and openings that are 3 feet above grade.

(1) In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

#### 4.3.5.5.6 Impact on the Economy

For impact on economy, estimated losses from a flood event are considered. Losses include but are not limited to general building stock damages, agricultural losses, business interruption, impacts to tourism and tax base to Westmoreland County. Damages to general building stock can be quantified using HAZUS-MH as discussed above. Other economic components such as loss of facility use, functional downtime, and social economic factors are less measurable with a high degree of certainty. For the purposes of this analysis, general building stock damages are further discussed in reference to impacts on the economy of Westmoreland County.

Flooding can cause extensive damage to public utilities and disruptions to the delivery of services. Loss of power and communications may occur, and drinking water and wastewater treatment facilities may be temporarily out of operation. Flooded streets and road blocks make it difficult for emergency vehicles to respond to calls for service. Floodwaters can wash out sections of roadway and bridges.

Direct building losses are the estimated costs to repair or replace the damage caused to the building. The potential damage estimated to the general building stock inventory associated with the 1-percent flood is approximately \$827 million, which represents 8 percent of the County’s overall total general building stock inventory. These dollar value losses to the County’s total building inventory replacement value, in addition to damages to roadways and infrastructure, would greatly impact the local economy.

HAZUS-MH estimates the amount of debris generated from the flood events as a result of 1-percent flood events. The model breaks down debris into three categories: (1) finishes (dry wall, insulation, etc.); (2) structural (wood, brick, etc.); and (3) foundations (concrete slab and block, rebar, etc.). The distinction is made because of the different types of equipment needed to handle the debris. Table 4.3.5-11 summarizes the debris HAZUS-MH 2.1 estimates for these events.

**Table 4.3.5-11. Estimated Debris Generated from the 1-Percent Flood Event**

Municipality	1% Flood Event			
	Total (tons)	Finish (tons)	Structure (tons)	Foundation (tons)
ADAMSBURG	1333.7	471.0	477.4	385.3
ALLEGHENY	471	11.9	256.4	202.7
ARNOLD	94.6	54.7	20.8	19.1
ARONA	69.2	8.0	34.6	26.6
AVONMORE	388.6	124.9	143.5	120.2
BELL	705.7	206.4	271.6	227.7
BOLIVAR	942.2	372.3	293.6	276.3
COOK	28.7	28.7	-	-
DELMONT	1318.6	812.0	294.5	212.1
DERRY	6526.4	1,187.9	3,010.3	2,328.2
DERRY TOWNSHIP	603	257.4	165.5	180.1



## SECTION 4.3.4: RISK ASSESSMENT – FLOOD

Municipality	1% Flood Event			
	Total (tons)	Finish (tons)	Structure (tons)	Foundation (tons)
DONEGAL	0	-	-	-
DONEGAL TOWNSHIP	1061.7	476.7	272.5	312.5
EAST HUNTINGDON	106.2	51.0	30.8	24.4
EAST VANDERGRIFT	728.4	302.5	245.7	180.2
EXPORT	622.7	217.0	215.1	190.6
FAIRFIELD	960.6	309.9	348.1	302.6
GREENSBURG	4476.8	1,728.6	1,557.0	1,191.2
HEMPFIELD	95.8	37.4	30.5	27.9
HUNKER	68.3	19.2	26.3	22.8
HYDE PARK	847.3	216.5	364.7	266.1
IRWIN	2139.5	566.3	885.7	687.5
JEANNETTE	6100.2	1,365.6	2,691.2	2,043.4
LATROBE	97.5	26.2	41.3	30.0
LAUREL MOUNTAIN BOROUGH	594.6	338.1	153.2	103.3
LIGONIER	3367.4	1,481.2	1,049.9	836.3
LIGONIER TOWNSHIP	2308.2	730.8	875.3	702.1
LOWER BURRELL	176	58.8	62.2	55.0
LOYALHANNA	1712.2	314.0	810.7	587.5
MADISON	0	-	-	-
MANOR	96	48.0	30.0	18.0
MONESSEN	109.2	105.9	1.3	2.0
MOUNT PLEASANT	1922.4	833.9	581.7	506.8
MOUNT PLEASANT TOWNSHIP	3958.1	1,223.3	1,553.2	1,181.6
MURRYSVILLE	1814.3	349.8	790.7	673.8
NEW ALEXANDRIA	380	178.1	111.1	90.8
NEW FLORENCE	3116.9	869.5	1,241.2	1,006.2
NEW KENSINGTON	992.7	263.3	443.4	286.0
NEW STANTON	317	70.3	133.3	113.4
NORTH BELLE VERNON	6965.9	1,539.7	3,057.8	2,368.4
NORTH HUNTINGDON	191.1	76.3	66.1	48.7
NORTH IRWIN	10.3	3.6	3.9	2.8

Municipality	1% Flood Event			
	Total (tons)	Finish (tons)	Structure (tons)	Foundation (tons)
OKLAHOMA	394.7	166.4	129.8	98.5
PENN	1378.3	694.5	384.2	299.6
PENN TOWNSHIP	3452.5	895.2	1,415.3	1,142.0
ROSTRAVER	18815.1	1,767.1	10,043.8	7,004.2
SALEM	385.8	308.7	44.5	32.6
SCOTTDAL	105.8	82.7	9.1	14.0
SEWARD	3422.3	896.3	1,368.9	1,157.1
SEWICKLEY	516.1	268.7	137.0	110.4
SMITHTON	641	197.6	255.3	188.1
SOUTH GREENSBURG	2837.3	949.0	1,024.1	864.2
SOUTH HUNTINGDON	47.2	22.2	14.1	10.9
SOUTHWEST GREENSBURG	1156.5	427.5	374.5	354.5
ST. CLAIR	1129.6	406.7	405.1	317.8
SUTERSVILLE	303.6	81.8	131.8	90.0
TRAFFORD	3343.2	1,145.5	1,232.8	964.9
UNITY	486.1	181.4	172.6	132.1
UPPER BURRELL	312.9	68.9	135.4	108.6
VANDERGRIFT	950.2	303.0	343.3	303.9
WASHINGTON	43.5	9.1	19.2	15.2
WEST LEECHBURG	4254.3	1,406.1	1,682.4	1,165.8
WEST NEWTON	106.5	56.2	29.1	21.2
YOUNGSTOWN	269.5	146.5	71.3	51.7
YOUNGWOOD	1333.7	471.0	477.4	385.3
<b>WESTMORELAND COUNTY (TOTAL)</b>	<b>103,504.7</b>	<b>28,288.8</b>	<b>42,543.1</b>	<b>32,672.8</b>

Source: HAZUS-MH 2.1

#### 4.3.5.5.7 Future Growth and Development

As discussed in Section 4.4, areas targeted for future growth and development have been identified across the County. Any areas of growth could be potentially impacted by the flood hazard if located within the identified hazard areas. It is the intention of the County to discourage development in vulnerable areas or to encourage higher regulatory standards on the local level.

#### 4.3.5.5.8 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency and intensity of weather events. Both globally and at the local scale, climate change has the potential to alter the prevalence and severity of extremes such as flood events. While predicting changes of flood events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society and the environment (U.S. Environmental Protection Agency [EPA], 2006).

Pennsylvania's Department of Environmental Protection was directed by the Climate Change Act (Act 70 of 2008) to initiate a study of the potential impacts of global climate change on the Commonwealth. The June 2009 Pennsylvania Climate Impact Assessment's main findings indicate it is very likely that Pennsylvania will experience increased temperatures in the 21st century. An increase in the variability of temperature and precipitation may lead to increased frequency and/or severity of storm events. Summer floods and general stream flow variability are projected to increase due to increased variability in precipitation. Even with the anticipated increase in winter precipitation as rain rather than snow, increased winter temperatures and a reduced snowpack may decrease rain-on-snow events and thus major flooding events in Pennsylvania. This conclusion however remains speculative until further studies can validate. Future improvements in modeling smaller scale climatic processes can be expected and will lead to improved understanding of how the changing climate will alter temperature, precipitation, storms and flood events in Pennsylvania (Shortle et. al, 2009).

#### 4.3.5.5.9 Additional Data and Next Steps

A HAZUS-MH riverine flood analysis was conducted for Westmoreland County using the most current and best available data including critical facility inventories and FEMA DFIRM. For future plan updates, more accurate exposure and loss estimates can be produced by replacing the national default demographic inventory with 2010 U.S. Census data when it becomes available in the HAZUS-MH model, and update the default general building stock inventory in HAZUS-MH and conduct the loss estimates at the structure level.

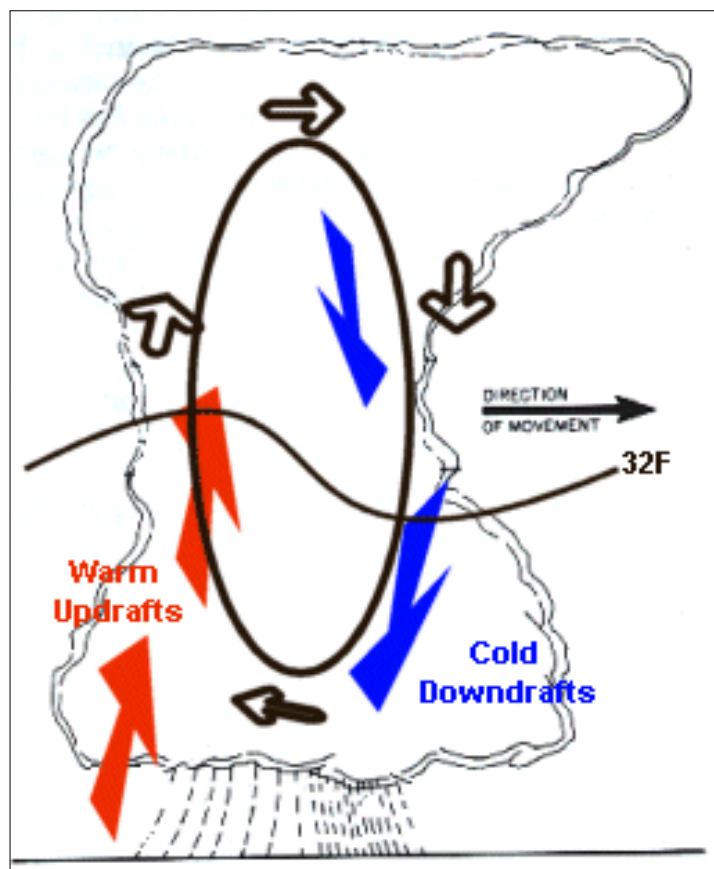
Specific mitigation actions addressing improved data collection and further vulnerability analysis is included in Section 6 (Mitigation Strategy) of this Plan.

### 4.3.6 Hailstorm

Hail forms inside a thunderstorm where there are strong updrafts of warm air and downdrafts of cold water. If a water droplet is picked up by the updrafts, it can be carried well above the freezing level. Water droplets freeze when temperatures reach 32°F or colder. As the frozen droplet begins to fall, it may thaw as it moves into warmer air toward the bottom of the thunderstorm. However, the droplet may be picked up again by another updraft and carried back into the cold air and re-freeze. With each trip above and below the freezing level, the frozen droplet adds another layer of ice. The frozen droplet, with many layers of ice, falls to the ground as hail. Most hail is small and typically less than 2 inches (") in diameter (NWS 2010). Figure 4.3.6-1 illustrates the process that occurs in hail formulation.

The size of hailstones is a direct function of the size and severity of the storm. The higher the temperatures at the earth's surface, the greater the strength of the updrafts, and the greater the amount of time the hailstones are suspended, giving them more time to increase in size. Damage to crops and vehicles are typically the most significant impacts of hailstorms.

*Figure 4.3.6-1. Hail Formation*



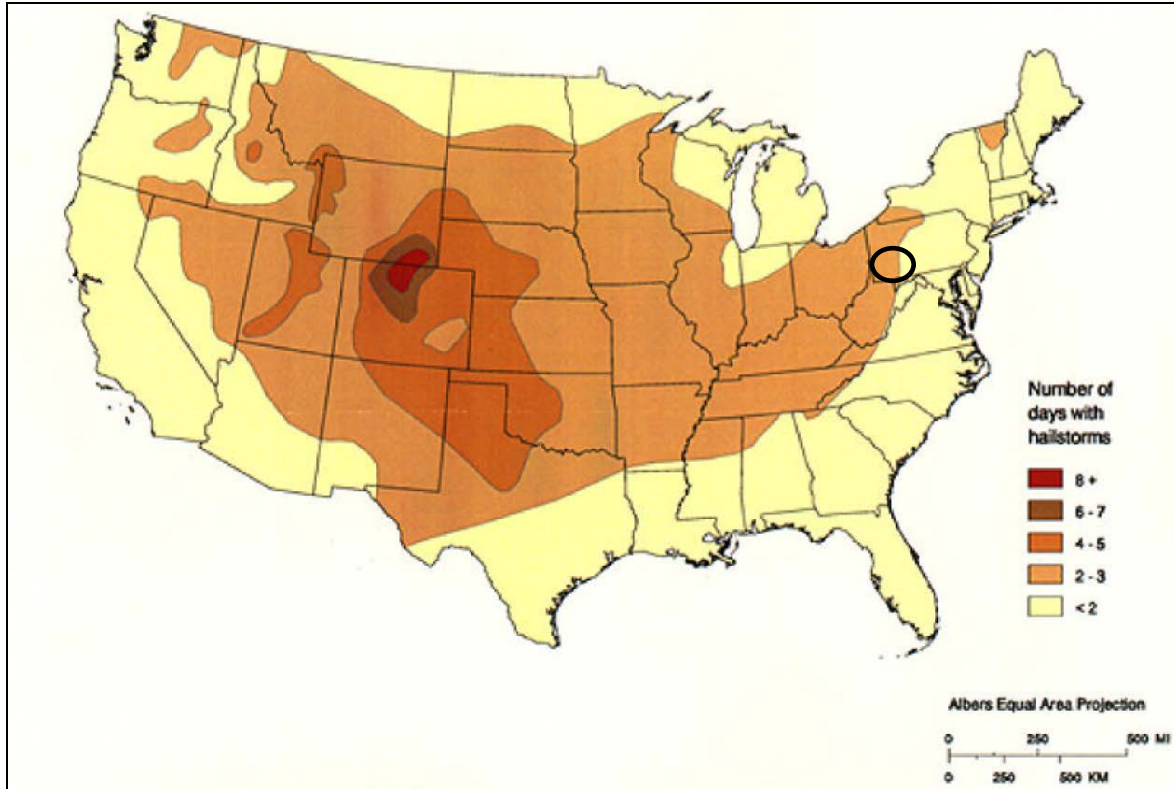
Source: NOAA 2012  
°F degrees Fahrenheit

#### 4.3.6.1 Location and Extent

Hail causes nearly \$2 billion in crop and property damages, on average, each year in the U.S. Hail occurs most frequently in states within the southern and central plains; however, because hail accompanies

thunderstorms, hail damage is possible throughout the entire U.S. (Federal Alliance for Safe Homes 2006). Figure 4.3.6-9 indicates that Westmoreland County undergoes between less than two and three hailstorms a year, on average.

*Figure 4.3.6-2. Annual Frequency of Hailstorms in the U.S.*

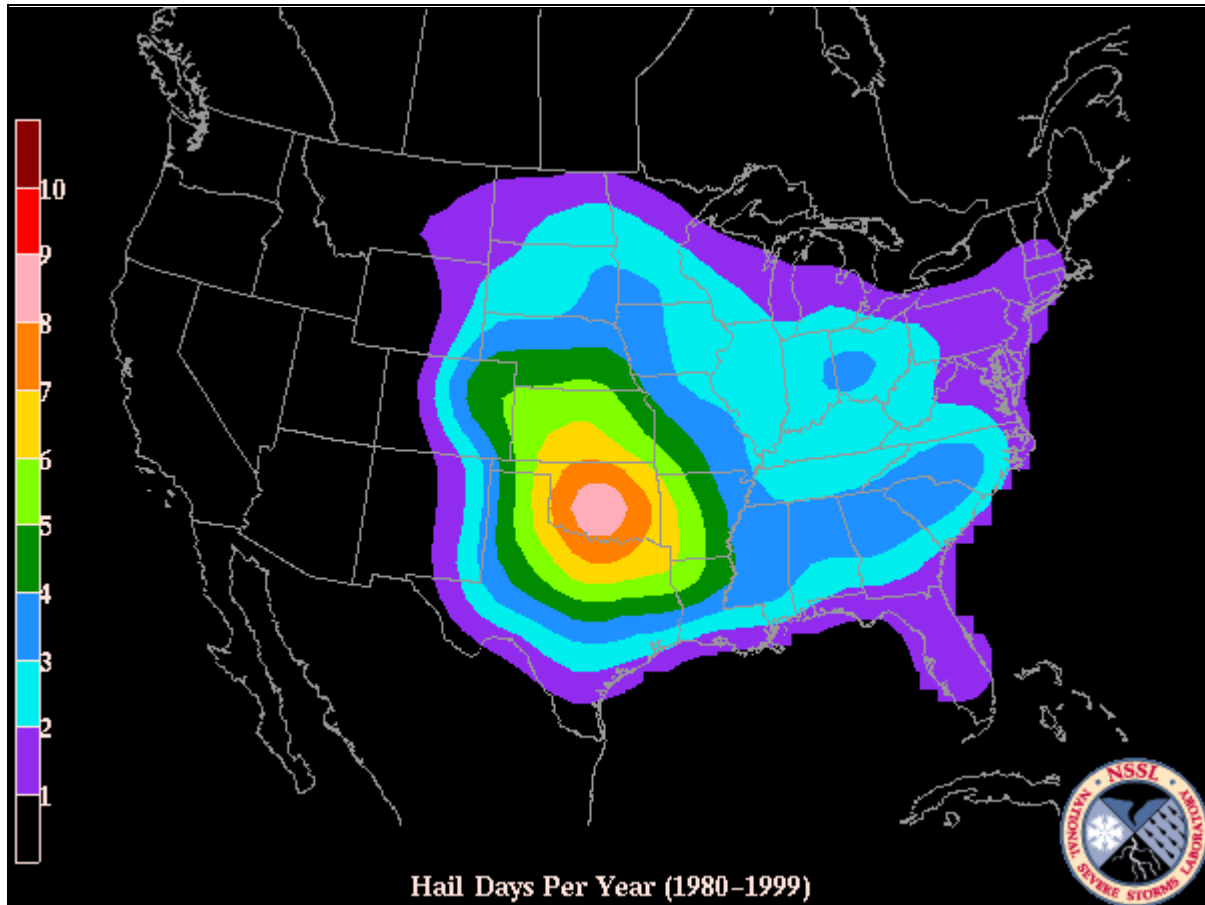


Source: Federal Emergency Management Agency (FEMA) 1996

Note: The black oval indicates the approximate location of Westmoreland County.

The National Oceanic and Atmospheric Administration’s (NOAA) National Severe Storms Laboratory (NSSL) started a project to estimate likelihood of severe weather hazards in the U.S. “Severe thunderstorms” were defined in the U.S. as having one or more of the following characteristics: associated tornado(s), gusts at least 58 miles per hour (mph), or hail at least 0.75” in diameter. Figure 4.3.6-3 illustrates the average number of days per year of hail events within 25 miles of any point. In Westmoreland County, the figure shows an average of 1 to 3 days per year of events with hail at least 0.75-inch diameter.

**Figure 4.3.6-3. Total Annual Threat of Hail Events (0.75-inch diameter or greater) in the U.S., 1980 to 1999**



Source: National Severe Storms Laboratory (NSSL) 2003

Note: The mean number of days per year with one or more events within 25 miles of a point is shown here. The fill interval for hail days is 0.2, with the purple starting at 0.2 days. For the non-hail threats, the fill interval is 1, with the purple starting at 1. For the significant (violent) threat, it's 5 days per century (millennium) Range of Magnitude.

#### 4.3.6.2 Range of Magnitude

Hail can vary in size from less than an inch to several inches in diameter, and can cause significant damage to crops and property. Damage depends on the size, duration, and intensity of hail precipitation. Those who do not seek shelter could face serious injury. Automobiles and aircraft are particularly susceptible to damage. Because hail precipitation usually occurs during thunderstorm events, effects of other hazards associated with thunderstorms (strong winds, intense precipitation, lightning, etc.) often occur concurrently.

Based on reports from the National Climatic Data Center (NCDC), a worst-case scenario for a hailstorm in Westmoreland County would be a storm that dropped 2.5-inch-diameter (the largest recorded in the county) hail throughout the county. This hail could cause widespread damages to property and crops.

Hail can be produced during many different types of storms. Typically, hail occurs with thunderstorm events. The size of hail is estimated by comparing it to a known object. During most hailstorms, hail is produced in a variety of sizes, and only the very largest hail stones pose serious risk to people who are exposed. Table shows the different sizes of hail via comparisons to real-world objects.



**Table 4.3.6-1. Hail Size**

Size	Inches in Diameter
Pea	0.25 inch
Marble/mothball	0.50 inch
Dime/Penny	0.75 inch
Nickel	0.875 inch
Quarter	1.0 inch
Ping-Pong Ball	1.5 inches
Golf Ball	1.75 inches
Tennis Ball	2.5 inches
Baseball	2.75 inches
Tea Cup	3.0 inches
Grapefruit	4.0 inches
Softball	4.5 inches

Source: National Oceanic and Atmospheric Administration (NOAA) 2012

#### 4.3.6.3 Past Occurrence

Hailstorms occur as a routine part of severe weather in Westmoreland County, and potential for hail storms exists throughout the County with a few minor incidents occurring each year. Westmoreland County has relatively low potential for significant hail events, based on previous records.

The Commonwealth of Pennsylvania 2013 All-Hazard Mitigation Plan (PA HMP) states that approximately 96% of hailstorm events throughout the Commonwealth have occurred during the months of April, May, June, July, November, and September. Moreover, approximately 87% of historic hailstorm events have occurred during the afternoon (noon to 5 p.m.) or evening (5 p.m. to 9 p.m.) hours. Both of these two preceding statements are consistent with historical hailstorm reports from Westmoreland County.

According to the U.S. Department of Agriculture (USDA) Risk Management Agency, hailstorm events between 1950 and 2013 have resulted in \$536 in crop insurance claims—in a single claim during 2001 (USDA 2013). Pennsylvania has never received a federal disaster declaration because of a hail event.

The NOAA-NCDC Storm Events database contains references to hail as a reported storm incident in Westmoreland County from 1950 to April 30, 2013, as shown in Table 4.3.6-2 below. The database indicates that 224 separate reports were issued throughout the County from 1950 to 2013. Some reports specified different times of day or different localities regarding the same storm. According to these reports, Westmoreland County has undergone hail ranging in size from 0.75" to 2.5" in diameter, with no reported deaths, injuries, or property or crop damages.

**Table 4.3.6-2.** History of Hailstorms in Westmoreland County, 1950 to 2013

Date	Diameter (inches)	Location	Date	Diameter (inches)	Location	Date	Diameter (inches)	Location
7/23/1962	2	Westmoreland Co.	8/27/1994	0.75	Vandergrift	7/10/2001	1.25	Derry
5/28/1966	2	Westmoreland Co.	6/7/1995	0.75	New Florence	4/28/2002	1	Lower Burrell
4/1/1973	1.5	Westmoreland Co.	6/21/1995	0.75	Indiana	4/28/2002	1.5	Arnold
6/16/1974	0.75	Westmoreland Co.	7/15/1995	0.75	Mt. Pleasant	7/2/2002	0.75	Greensburg
7/11/1976	1	Westmoreland Co.	7/15/1995	0.75	Jeanette	7/4/2002	0.75	Greensburg
3/30/1977	1.75	Westmoreland Co.	7/15/1995	0.88	Pleasant Valley	7/4/2002	0.75	Latrobe
3/30/1977	1.75	Westmoreland Co.	7/15/1995	1.75	Irwin	7/4/2002	1	Laughlintown
4/2/1977	0.75	Westmoreland Co.	7/28/1995	0.75	Irwin	7/4/2002	1	Jeanette
6/17/1977	1	Westmoreland Co.	6/11/1996	0.75	Ligonier	7/26/2002	0.75	Latrobe
6/27/1978	1	Westmoreland Co.	7/3/1996	0.75	Murrysville	7/26/2002	1	Latrobe
5/11/1979	1.75	Westmoreland Co.	8/8/1996	1	Murrysville	7/14/2003	0.75	Greensburg
6/30/1981	1	Westmoreland Co.	8/15/1996	0.75	Carbon	8/3/2003	0.75	Latrobe
6/17/1983	1	Westmoreland Co.	1/9/1998	0.75	Lower Burrell	8/12/2003	1	Latrobe
7/20/1983	1	Westmoreland Co.	5/31/1998	0.75	Derry	8/26/2003	0.75	Acme
4/14/1984	0.88	Westmoreland Co.	6/2/1998	0.75	Irwin	8/26/2003	0.75	Latrobe
4/14/1984	2.5	Westmoreland Co.	6/2/1998	0.75	Delmont	8/27/2003	1	Greensburg
6/29/1984	1	Westmoreland Co.	6/2/1998	0.75	New Stanton	5/17/2004	0.75	New Stanton
6/29/1984	1	Westmoreland Co.	6/2/1998	1	Arona	5/25/2004	0.75	New Florence
5/27/1985	0.75	Westmoreland Co.	6/2/1998	1	Irwin	6/14/2004	0.75	West Leechburg
5/27/1985	1.25	Westmoreland Co.	6/2/1998	1	Donegal	8/19/2004	0.88	Irwin
7/8/1985	0.75	Westmoreland Co.	6/2/1998	1.25	Irwin	8/19/2004	1	Youngwood
7/8/1985	0.75	Westmoreland Co.	6/2/1998	1.75	Mt. Pleasant	6/6/2005	0.75	North Huntingdon
7/8/1985	0.75	Westmoreland Co.	6/2/1998	1.75	Norvelt	6/6/2005	0.88	Delmont
7/8/1985	0.75	Westmoreland Co.	6/2/1998	1.75	Pleasant Valley	6/6/2005	1	Latrobe
7/8/1985	0.75	Westmoreland Co.	6/19/1998	0.75	Jones Mills	6/6/2005	1	Scottdale
7/8/1985	1	Westmoreland Co.	4/9/1999	0.75	Stahlstown	7/8/2005	0.75	New Stanton
8/6/1986	1.75	Westmoreland Co.	4/11/1999	0.75	Greensburg	7/13/2005	0.75	Mt. Pleasant
5/23/1988	1.5	Westmoreland Co.	6/2/2000	0.75	Scottdale	7/13/2005	0.88	Mt. Pleasant
6/16/1988	1.25	Westmoreland Co.	6/29/2000	0.75	Avonmore	8/20/2005	0.75	Greensburg
6/24/1992	1	Westmoreland Co.	6/29/2000	1	West Leechburg	8/20/2005	0.88	Greensburg
7/10/1992	0.75	Westmoreland Co.	7/14/2000	1	New Kensington	8/20/2005	0.88	Jeanette
7/24/1992	1.75	Westmoreland Co.	7/28/2000	1	Greensburg	4/13/2006	0.88	New Stanton
8/26/1992	0.75	Westmoreland Co.	4/9/2001	0.75	Scottdale	4/13/2006	0.88	Irwin
5/12/1993	0.75	Latrobe	4/9/2001	0.75	Lower Burrell	6/22/2006	0.75	Vandergrift
5/12/1993	1	Latrobe	4/9/2001	0.75	Greensburg	7/2/2006	0.88	Donegal
6/11/1994	1	New Stanton	4/9/2001	2	Allegheny	3/27/2007	0.88	Irwin
6/11/1994	1	Latrobe	7/1/2001	0.75	Derry	6/13/2007	0.75	Latrobe
6/18/2007	0.88	Mt. Pleasant	5/14/2010	0.75	Central	8/1/2011	0.88	Harrison City

Date	Diameter (inches)	Location
6/19/2007	0.88	New Kensington
6/21/2007	0.75	Vandergrift
7/29/2007	0.75	Scottdale
8/23/2007	0.75	Salem
8/23/2007	0.88	Kiskimnetas
6/16/2008	0.75	Trafford
5/28/2009	0.75	Mt. Pleasant
6/9/2009	0.75	Ligonier
6/9/2009	0.88	North Irwin
6/9/2009	1.75	Ligonier
6/17/2009	0.75	Loyalhanna
6/17/2009	1	Greensburg
6/17/2009	1	Mt. Pleasant
7/21/2009	0.88	Mt. Pleasant
5/14/2010	1	Jeanette
5/14/2010	1	Loyalhanna
5/14/2010	1.75	Hempfield
5/14/2010	1.25	New Alexandria
5/14/2010	1.75	Latrobe
5/14/2010	0.75	West Newton
5/14/2010	0.88	Derry
5/14/2010	1	Loyalhanna
5/14/2010	0.88	Hutchinson

Date	Diameter (inches)	Location
3/21/2011	0.75	Greensburg
3/21/2011	0.88	Sewickley
3/23/2011	1	Trafford
3/23/2011	1	Avonmore
3/23/2011	1	Greensburg
3/23/2011	1	Loyalhanna
3/23/2011	1	Biddle
3/23/2011	1.25	Greensburg
3/23/2011	1.25	Loyalhanna
3/23/2011	1.5	North Irwin
3/23/2011	1.5	Hempfield
3/23/2011	1.75	Adamsburg
3/23/2011	1.75	North Irwin
3/23/2011	1.75	Loyalhanna
3/23/2011	1.75	Whitney
3/23/2011	2	Greensburg
4/26/2011	0.88	Greensburg
6/9/2011	0.75	Derry
6/9/2011	0.88	Greensburg
6/9/2011	0.88	Youngwood
6/9/2011	1	Irwin
7/4/2011	0.88	Newlonsburg
8/1/2011	0.75	Harrison City

Date	Diameter (inches)	Location
8/1/2011	1	Irwin
9/3/2011	0.75	New Kensington
9/3/2011	1.25	New Kensington
3/28/2012	0.75	North Huntingdon
3/28/2012	0.75	North Irwin
5/27/2012	1.25	Sewickley
7/4/2012	0.75	Hunker
7/4/2012	0.75	Hempfield
7/4/2012	0.88	Newtonsburg
7/4/2012	0.88	Latrobe
7/4/2012	1	Humphries
7/4/2012	1	Mt. Pleasant
7/4/2012	1	North Irwin
7/4/2012	1.25	North Huntingdon
7/4/2012	1.75	Mt. Pleasant
7/4/2012	1.75	North Irwin
7/4/2012	1.75	North Huntingdon
7/18/2012	1.75	Mt. Pleasant
7/24/2012	0.88	Newtonsburg
7/26/2012	0.75	Hempfield
7/26/2012	1	North Irwin
7/28/2012	0.88	Murrysville
4/10/2013	1	Loyalhanna

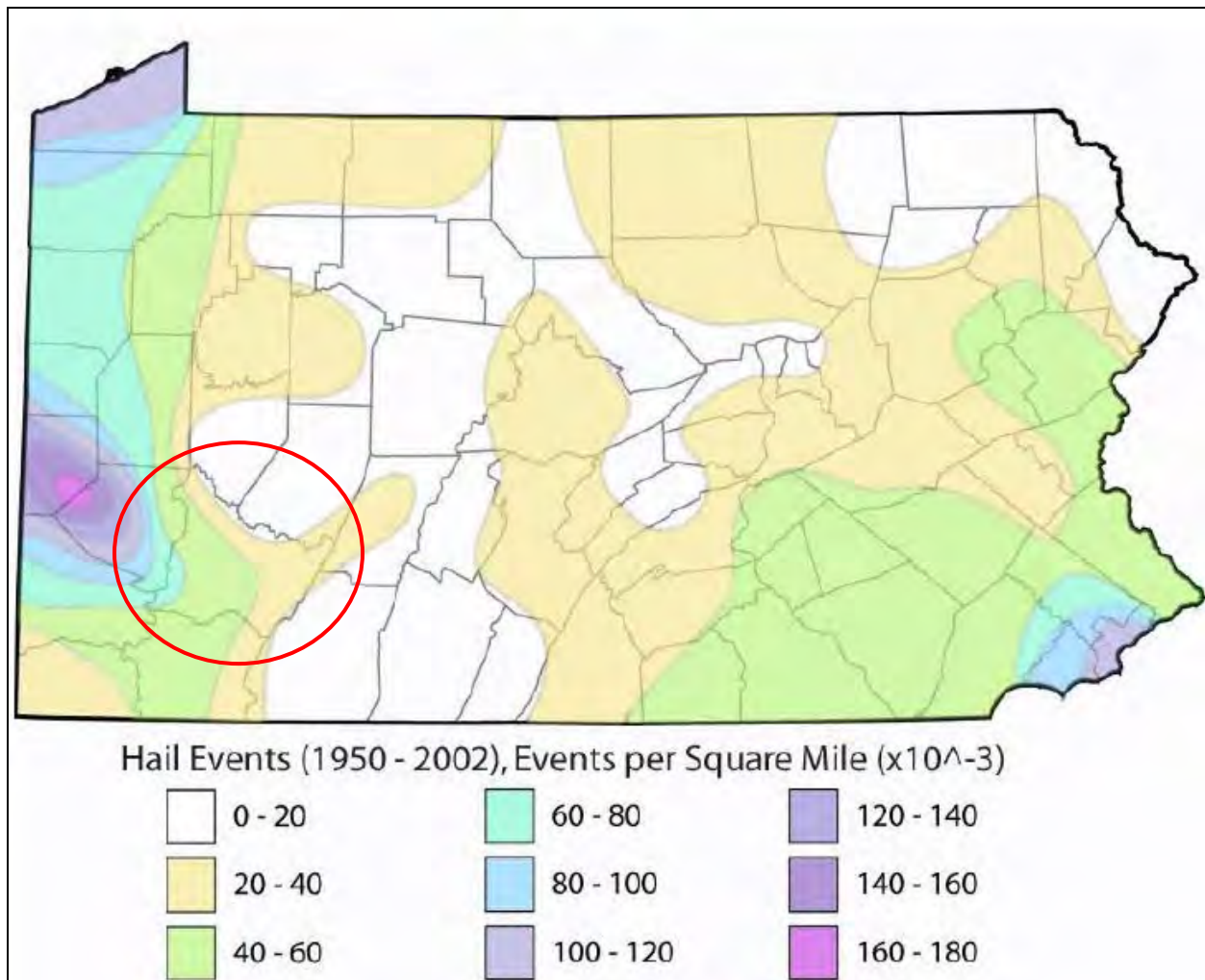
Source: NCDC, 2013

Notes: Information regarding municipal event occurrences prior to 1992 was unavailable through NCDC or other researched means  
Events occurring on the same date in the same municipality were recorded as separate events based on hail diameter

#### 4.3.6.4 Future Occurrence

It is not possible to predict formation of a hailstorm with more than a few days' lead time. The past occurrences described above, however, indicate that hailstorm events in Westmoreland County probably will occur every year throughout the months of April and September. Encompassing events state-wide between 1950 and 2002, Figure 4.3.6-4 below shows the number of hail events per square mile across Pennsylvania. Based on these historical data, the west and southwest sections of the County can expect to undergo a higher number of hailstorm events than will other areas of the County. Westmoreland County as a whole has undergone significantly fewer hailstorm events per square mile than other areas in the western or southeastern parts of Pennsylvania.

**Figure 4.3.6-4. Hail Events Per Square Mile in Pennsylvania**



Source: Pennsylvania Emergency Management Agency (PEMA) 2013

Note: The red oval indicates the location of Westmoreland County.

Future occurrences of hailstorms can be considered *likely* as defined by the Risk Factor Methodology probability criteria (refer to Section 4.4).

#### 4.3.6.5 Vulnerability Assessment

To understand risk, a community must identify and assess exposed or vulnerable assets within the identified hazard area. Regarding hail events, the entire County has been identified as the hazard area. Therefore, all assets in Westmoreland County (population, structures, critical facilities, and lifelines), as described in the County Profile section, are vulnerable. The following sections evaluate and estimate potential effects of hailstorms on the County, discussing:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on: (1) life, health, and safety of residents; (2) general building stock; (3) critical facilities; (4) economy; and (5) future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist in understanding this hazard over time.

##### 4.3.6.5.1 Overview of Vulnerability

The entire County, including all critical infrastructure, is vulnerable to the effects of hail, as the storm cells that produce this hazard can develop over any part of the region. The area of damage due to these storms is relatively small because a single storm does not cause widespread devastation, but a storm may cause damage within a focused area.

Hail can cause serious damage to automobiles, aircraft, skylights, livestock, and crops. Areas of the County with large amounts of farmland and high agricultural yields are more likely to be affected by hailstorm hazards. Most notably, corn and soybean crops can be damaged to the extent of total loss, especially if an event occurs later in the growing season (PEMA 2010).

##### 4.3.6.5.2 Data and Methodology

National weather databases, the Commonwealth HMP, and local resources were referenced to collect and analyze data regarding hazard impacts on Westmoreland County.

##### 4.3.6.5.3 Impact on Life, Health, and Safety

The entire population of the County is considered exposed to the hail hazard. People outdoors (e.g., pursuing recreational activities and farming) are considered most vulnerable to the hazard because they ordinarily would receive little to no warning, and shelter may not be available to them. Moving to a lower risk location decreases a person's vulnerability.

##### 4.3.6.5.4 Impact on General Building Stock, Critical Facilities, and the Economy

Hailstorms primarily affect agricultural products. The facilities most vulnerable to hailstorm threats are food- and agriculture-related—food producers and food manufacturers. These facilities are present within both urban and rural areas, and would be directly or indirectly affected by a hailstorm event. According to the State HMP, Westmoreland County has one food/agricultural state facility within its borders (Note: Lancaster County has with 17 state food/agricultural facilities—the most of any Pennsylvania county).

As discussed earlier in the Past Occurrence subsection, Westmoreland County has not undergone historical hailstorm property damage or crop damage. However, given the unpredictability of hailstorms, significant property and crop damage is possible during any hailstorm event. Jurisdictional loss estimation stems from lost agricultural revenues throughout the County. The USDA Census of Agriculture enumerates farmland acreage by county, as well as the annual market value of all agricultural products sold by county, from year 2007. As shown in Table 4.3.6-3 below, if a hailstorm would eliminate the entire agricultural yield in Westmoreland County, total losses could reach nearly \$58.5 million.

**Table 4.3.6-3. Estimated County Losses Relating to Agricultural Production**  
(USDA Census of Agriculture 2007)

County	Impacted Farmland Acreage	Market Value Of All Agricultural Products
Westmoreland	167,489	\$58,437,000

Source: PEMA 2013

#### 4.3.6.5.5 Future Growth and Development

Areas targeted for potential future growth and development within the next 5 to 10 years have been identified across the County. Refer to Section 4.4 in this HMP. Exposure of any new development and new residents to the drought hazard is expected.

#### 4.3.6.5.6 Effect of Climate Change on Vulnerability

The definition of “climate” is not restricted to average temperature and precipitation, but also includes type, frequency, and intensity of weather events. On both global and local scales, climate change could alter the prevalence and severity of extremes such as hailstorms. While predicting changes of storm events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating effects of future climate change on human health, society, and the environment (U.S. Environmental Protection Agency [EPA] 2006).

Pennsylvania’s Department of Environmental Protection was directed by the Climate Change Act (Act 70 of 2008) to initiate a study of potential impacts of global climate change on the Commonwealth. The June 2009 Pennsylvania Climate Impact Assessment’s main findings indicate likelihood that Pennsylvania will undergo increased temperatures in the 21st century. An increase in variability of temperature and precipitation may well lead to increased frequency and/or severity of hailstorm events. Future improvements in modeling smaller scale climatic processes such as thunderstorms and associated hailstorms can be expected, and will lead to improved understanding of how the changing climate will alter storms, such as hailstorm events, in Pennsylvania (Shortle et al. 2009).

#### 4.3.6.5.7 Additional Data and Next Steps

The assessment above identifies vulnerable populations and potential structural and economic losses associated with this hazard of concern. Collection of additional/actual loss data specific to the Plan participants will further enhance Westmoreland County’s vulnerability assessment.



### 4.3.7 Hurricane and Tropical Storm

Almost all tropical storms and hurricanes in the Atlantic basin (which includes the Gulf of Mexico and Caribbean Sea) form between June 1 and November 30 (the hurricane season). November and September are peak months for hurricane development. Westmoreland County is vulnerable to hurricanes and tropical storms, depending on the storm's track. As a result of the county's position inland, Westmoreland County's highest risk associated with hurricanes and tropical storms lies in the increased potential for flooding because of heavy rain and wind damage. The majority of damage after hurricanes and tropical storms often results from residual wind damage and inland flooding, as was demonstrated during recent tropical storms. Each element of the hurricane hazard is described below as the impacts relate to Pennsylvania and Westmoreland County:

- Flooding causes severe damage in Pennsylvania during hurricanes. Flooding and flash floods brought by the torrential rains of a hurricane are dangerous threats. Rain delivered by tropical storm can amount to almost nothing to as much as 15 inches in 2 to 3 days. Hurricane Diane (1955) caused little damage as it moved onto the continent, but long after its winds subsided, it brought floods to Pennsylvania, New York, and New England that killed 200 persons and cost an estimated \$700 million in damage. In 1972, Hurricane Agnes fused with another storm system, flooding streams and river basins in the Northeast with more than 1 foot of rain in less than 12 hours, killing 117 people and causing almost \$3 billion in damage.
- High wind speeds occur in a narrow ring usually extending 20 to 30 miles from the wall of the eye of a hurricane. Minor damage begins at approximately 50 mph and includes broken branches. Moderate damage, such as broken window and loosed shingles, begins around 80 mph, and major structural damage and destruction begins at 100 mph. Wind alone is sufficient to cause total destruction for some structures. Mobile homes, with their lack of foundation, light weight, and minimal anchoring, make them particularly vulnerable to hurricane winds. Some hurricanes spawn tornadoes that contribute to the damage delivered by hurricanes. Tornadoes are discussed in the wind section of this report. Winds to the right of the storm track typically cause more damage because wind speed is added to track speed.

Hurricanes and tropical storms often occur at the same time. As a result, officials assign short, distinctive names to the storms to avoid confusion among weather stations, coastal bases, and ships at sea. Since 1953, Atlantic tropical storms have been named from lists originated by the National Hurricane Center. Currently, they are maintained and updated by the World Meteorological Organization. The list of names in the table below are used in rotation and recycled every 6 years. For example, the 2014 list will be used again in 2020. The only time there is a change in the list is if the named storm was so costly or deadly that its future use would be inappropriate. If that occurs, the World Meteorological Organization committee will select a new name to replace the one removed from the list. If all the names in a season's list have been used, later storms are named for Greek letters, in alphabetical order. A storm is given a name once its winds reach a speed of 40 mph. In addition to the Atlantic list of names, there are 10 other lists corresponding to other storm-prone regions of the world (NOAA 2013). Table 4.3.7-1 lists the tropical cyclone names for 2014 through 2018.

*Table 4.3.7-1. Tropical Cyclone Names for the Atlantic*

2014	2015	2016	2017	2018	2019
Arthur	Ana	Alex	Arlene	Alberto	Andrea
Bertha	Bill	Bonnie	Bret	Beryl	Barry
Cristobal	Claudette	Colin	Cindy	Chris	Chantal
Dolly	Danny	Danielle	Don	Debby	Dorian
Edouard	Erika	Earl	Emily	Ernesto	Erin
Fay	Fred	Fiona	Franklin	Florence	Fernand
Gonzalo	Grace	Gaston	Gert	Gordon	Gabrielle
Hanna	Henri	Hermine	Harvey	Helene	Humberto
Isaias	Ida	Ian	Irma	Isaac	Ingrid
Josephine	Joaquin	Julia	Jose	Joyce	Jerry
Kyle	Kate	Karl	Katia	Kirk	Karen
Laura	Larry	Lisa	Lee	Leslie	Lorenzo
Marco	Mindy	Matthew	Maria	Michael	Melissa
Nana	Nicholas	Nicole	Nate	Nadine	Nestor
Omar	Odette	Otto	Ophelia	Oscar	Olga
Paulette	Peter	Paula	Philippe	Patty	Pablo
Rene	Rose	Richard	Rina	Rafael	Rebekah
Sally	Sam	Shary	Sean	Sara	Sebastien
Teddy	Teresa	Tobias	Tammy	Tony	Tanya
Vicky	Victor	Virginie	Vince	Valerie	Van
Wilfred	Wanda	Walter	Whitney	William	Wendy

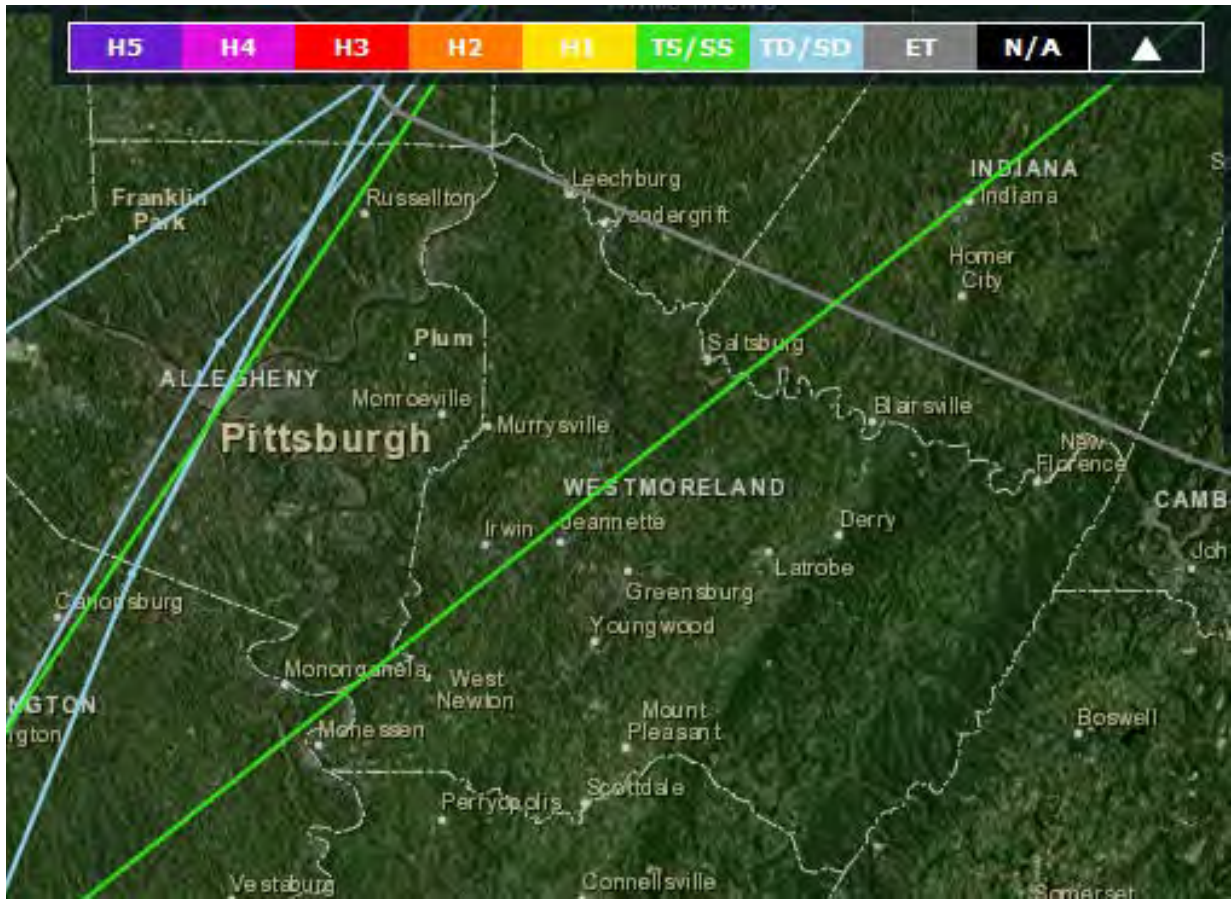
Source: NOAA, 2013

This section provides a profile and vulnerability assessment for the Hurricane and Tropical Storm Hazards. Both Hurricanes and Tropical Storms are associated with the common coastal flooding hazard. Coastal flooding does not pose a threat to Westmoreland County because of the county's location far inland from the Atlantic Ocean. As such, coastal flooding is not applicable to the county and will not be addressed in this profile.

#### 4.3.7.1 Location and Extent

NOAA's Historical Hurricane Tracks tool is a public interactive mapping application that displays Atlantic Basin and East-Central Pacific Basin tropical cyclone data. This interactive tool catalogues tropical cyclones that have occurred from 1842 to 2012 (the latest date available from the data source). Figure 4.3.7-1 displays tropical cyclone tracks for Pennsylvania; however, the associated names for some of these events are unknown. Between 1861 and 2012, Pennsylvania has experienced approximately 75 tropical cyclone events. Of these events, six occurred within 20 nautical miles of Westmoreland County, including Tropical Storm Sandy in 2012.

Figure 4.3.7-1. Historical Tropical Storm and Hurricane Tracks 1856 – 2012



Source: NOAA, 2013

The extent of a hurricane is categorized in accordance with the Saffir-Simpson Hurricane Scale. The Saffir-Simpson Hurricane Wind Scale is a 1-to-5 rating based on a hurricane’s sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous and require preventative measures (NOAA 2013). Table 4.3.7-2 presents this scale, which is used to estimate the potential property damage and flooding expected when a hurricane makes landfall.

Table 4.3.7-2. The Saffir-Simpson Scale

Category	Wind Speed (mph)	Expected Damage
1	74-95 mph	Very dangerous winds will produce some damage: Homes with well-constructed frames could have damage to roof, shingles, vinyl siding, and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph	Extremely dangerous winds will cause extensive damage: Homes with well-constructed frames could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.

Category	Wind Speed (mph)	Expected Damage
3 (major)	111-129 mph	Devastating damage will occur: Homes with well-built frames may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph	Catastrophic damage will occur: Homes with well-built frames can sustain severe damage with loss of most of the roof structure and some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	>157 mph	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: NOAA, 2013

Notes:

mph = Miles per hour

> = Greater than

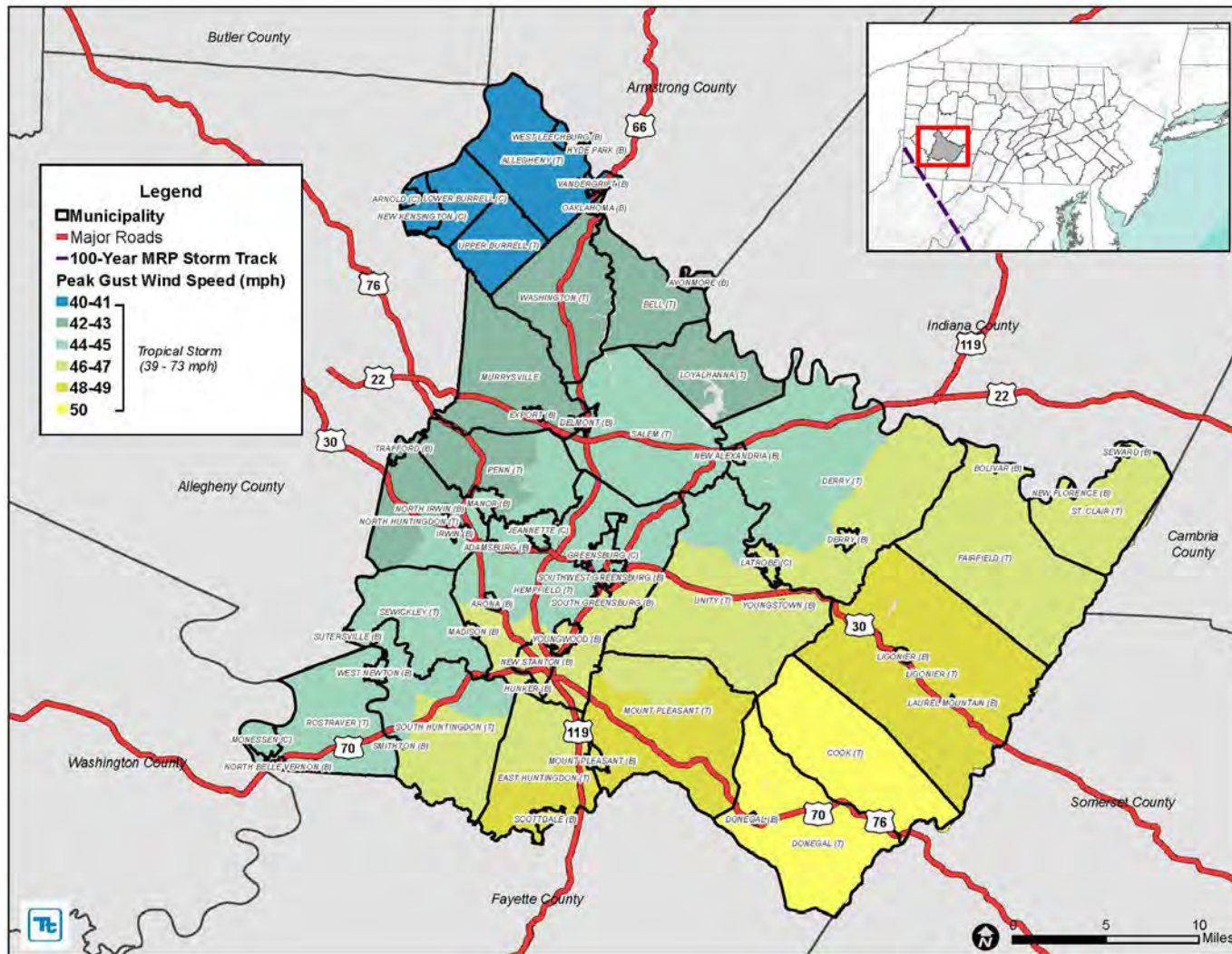
### Mean Return Period

In evaluating the potential for hazard events of a given magnitude, a mean return period (MRP) is often used. The MRP provides an estimate of the magnitude of an event that may occur within any given year based on past recorded events. The MRP is the average period of time, in years, between occurrences of a particular hazard event (equal to the inverse of the annual frequency of occurrence). For example, a flood that has a 1-percent chance of being equaled or exceeded in any given year is also referred to as the base flood and has a MRP of 100 and is known as a 100-year flood. The term “100-year flood” can be misleading; it is not the flood that will occur once every 100 years. Rather, it is the flood elevation that has a 1 percent chance of being equaled or exceeded each year. Therefore, the 100-year flood could occur more than once in a relatively short period of time or less than one time in 100 years (Dinicola 2009).

Figures 4.3.7-2 and 4.3.7-3 show the estimated maximum 3-second gust wind speeds that can be anticipated in the study area associated with the 100- and 500-year MRP HAZUS-MH model runs. The estimated hurricane tracks for the 100- and 500-year event are also shown. For the 100-year MRP event, the maximum 3-second wind speeds range from 40 to 50 mph, characteristic of a tropical storm. For the 500-year MRP event, the maximum 3-second gust wind speeds for the county range from 52 to 77 mph, characteristic of a Category 1 hurricane. The associated impacts and losses from these 100-year and 500-year MRP hurricane event model runs are reported in the Vulnerability Assessment later in this section.



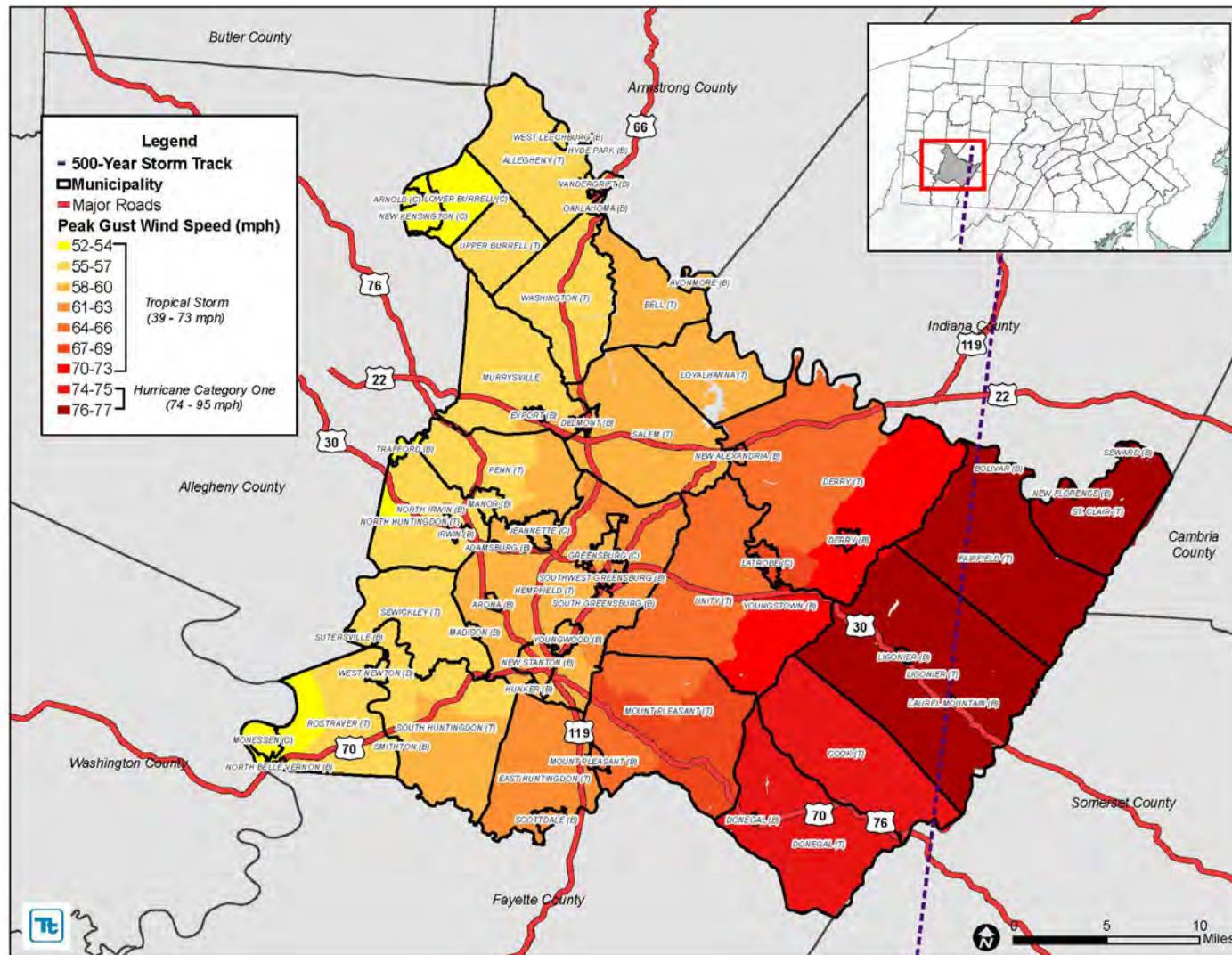
Figure 4.3.7-2 Wind Speeds for the 100-Year Mean Return Period Event in Westmoreland County.



Source: HAZUS-MH 2.1

Note: For the 100-year MRP event, the maximum 3-second wind speeds range from 40 to 50 mph, characteristic of a tropical storm.

Figure 4.3.7-3. Wind Speeds and Storm Track for the 500-Year Mean Return Period Event in Westmoreland County.



Source: HAZUS-MH 2.1

Note: For the 500-year MRP event, the maximum 3-second gust wind speeds range from 52 to 77 mph, characteristic of a Category 1 hurricane.



### 4.3.7.2 Range of Magnitude

Both hurricanes and tropical storms are categorized as tropical cyclones. A tropical cyclone is a rotating, organized system of clouds and thunderstorms that originates over tropical or sub-tropical waters and has a closed low-level circulation. Tropical depressions, tropical storms, and hurricanes are all considered tropical cyclones. These storms rotate counterclockwise around the center and are accompanied by heavy rain and strong winds. Tropical cyclones in the Atlantic Ocean and Caribbean occur between June 1 and November 30, with a peak from mid-November to late October (NOAA 2013). The average wind speeds for tropical storms and hurricanes are listed below:

- A tropical depression has a maximum sustained wind speeds of 38 mph or less
- A tropical storm has maximum sustained wind speeds of 39 to 73 mph
- A hurricane has maximum sustained wind speeds of 74 mph or higher. In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
- A major hurricane has maximum sustained wind speeds of 111 mph or higher (NOAA 2013).

Over a 2-year period, the U.S. coastline is struck by an average of three hurricanes, one of which is classified as a major hurricane. Hurricanes, tropical storms, and tropical depressions pose a threat to life and property. These storms bring heavy rain, storm surge, and flooding (NOAA 2013). The cooler waters off the coast of New Jersey can diminish the energy of storms that have traveled up the eastern seaboard in the Gulf Stream current. However, historical data show that a number of hurricanes and tropical storms have struck Pennsylvania, often as the remnants of a large storm hitting the Gulf or Atlantic coast hundreds of miles south of Pennsylvania, but maintaining sufficient wind and precipitation to cause substantial damage to the Commonwealth.

#### **Tropical Storm**

A tropical storm system is characterized by a low-pressure center and numerous thunderstorms that produce strong winds and heavy rain. (Winds are at a lower speed than hurricane-force winds, thus gaining its status as tropical storm versus hurricane.) Tropical storms strengthen when water evaporated from the ocean is released as the saturated air rises, resulting in condensation of water vapor contained in the moist air. They are fueled by a different heat mechanism than other cyclonic windstorms such as nor'easters and polar lows. The characteristic that separates tropical cyclones from other cyclonic systems is that the center of a tropical cyclone will be warmer than its surroundings at any height in the atmosphere, a phenomenon called “warm core” storm systems (NOAA 1999).

The term “tropical” refers both to the geographical origin of these systems, which usually form in tropical regions of the globe, and to their formation in maritime tropical air masses. The term “cyclone” refers to the cyclonic nature of the storms, with counterclockwise wind flow in the Northern Hemisphere, and clockwise wind flow in the Southern Hemisphere. The opposite direction of the wind flow is a result of the Coriolis force (NWS 2010).

Tropical storms and tropical depressions, while generally less dangerous than hurricanes, can be deadly. The winds of tropical depressions and storms are usually not the greatest threat; rather, the rains, flooding, and severe weather associated with the tropical storms are what customarily cause more significant problems. Serious power outages can also be associated with these types of events (NYCOEM Date Unknown; NOAA 1999).

While tropical storms can produce extremely powerful winds and torrential rain, they are also able to produce high waves, damaging storm surges, and tornadoes. They develop over large bodies of warm water and lose their strength if they move over land because of increased surface friction and loss of the warm ocean as an energy source. As a result, coastal regions can receive significant damage from a tropical cyclone, while inland regions are relatively safe from strong winds. Heavy rains, however, can produce significant flooding inland, and storm surges can produce extensive coastal flooding up to 25 miles from the coastline (Science Daily Date Unknown).

One measure of the size of a tropical cyclone is calculated by measuring the distance from its center of circulation to its outermost closed isobar. If the radius is less than 2 degrees of latitude, or 138 miles, then the cyclone is “very small” or a “midget.” A radius between 3 and 6 latitude degrees or 207 and 420 miles is considered “average-sized.” “Very large” tropical cyclones have a radius of greater than 8 degrees or 552 miles (U.S. Naval Observatory Date Unknown).

### **Hurricane**

A hurricane is a tropical storm that attains hurricane status when its wind speed reaches 74 or more miles an hour. Tropical systems may develop in the Atlantic between the Lesser Antilles and the African coast, or may develop in the warm tropical waters of the Caribbean and Gulf of Mexico. These storms may move up the Atlantic coast of the United States and strike the eastern seaboard or move into the United States through the states along the Gulf Coast, bringing wind and rain as far north as New England before moving offshore and heading east.

Because of its northern location on the Atlantic coastline, direct hits by storms of hurricane strength have a relatively low probability of affected New Jersey, compared with the Southern coastal and Gulf States. It is possible for the entire Commonwealth to be affected by hurricanes, although wind and surge effects tend to be concentrated in coastal areas, as well as specific riverine regions that may experience backwater effects from the storm surge.

A hurricane is a storm system with sustained winds of greater than 74 mph. Storms of this intensity develop a central eye that is an area of relative calm and the lowest atmospheric pressure. Surrounding the eye is a circulating eye wall and the strongest thunderstorms and winds (NJOEM 2011).

The worst hurricane or tropical storm to affect Westmoreland County was Hurricane Ivan, which dropped nearly 6 inches of rain on the southwestern portion of Pennsylvania, including Westmoreland County. The effects of this storm’s wind are detailed in Section 4.3.13. The resulting floods are discussed in Section 4.3.5. Given its inland location, Westmoreland County did not suffer any storm surge effects from this storm.

#### **4.3.7.3 Past Occurrence**

According to the NOAA-NCDC Storm Events Database, between 1996 and 2013 there has been no hurricane, tropical depression, or tropical storm events in Westmoreland County. However, the National Weather Service’s Pittsburgh, Pennsylvania, Service Forecast Office has maintained records of several storms that were at one point classified as hurricanes or tropical storms and have affected southwest Pennsylvania, including Westmoreland County. They are listed in Table 4.3.7-3.

**Table 4.3.7-3. Hurricanes and Tropical Storms that have Affected Southwest Pennsylvania**

Date	Name	Category at Landfall	FEMA Declaration Number	County Designated?	Precip. (in)
September 17, 1876	Hurricane #2	1			3.38
September 12, 1878	Hurricane #5	1			3.24
September 13, 1883	Hurricane #3	3			UNK
October 13-14, 1885	TS #8	0			UNK
November 21, 1888	Hurricane #3	2			3.57
October 31, 1899	Hurricane #6	2			1.22
September 14, 1892	TS #4	0			UNK
November 29, 1893	Hurricane #6	3			UNK
October 14, 1893	Hurricane #9	3			UNK
October 23, 1893	TS #11	0			UNK
July 9, 1896	Hurricane #1	2			UNK
September 30, 1896	Hurricane #4	3			UNK
September 29, 1901	TS #8	0			UNK
September 16-17, 1903	Hurricane #4	2			UNK
July 1-2, 1915	TS #1	0			1.05
October 1, 1915	Hurricane #5	4			1.5
October 23-24, 1923	TS #4	0			0.65
November 17-18, 1928	Hurricane #2	1			0.27
September 19-20, 1928	Hurricane #4	5			0.88
October 2, 1929	Hurricane #2	4			3.22

SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Date	Name	Category at Landfall	FEMA Declaration Number	County Designated?	Precip. (in)
November 24, 1933	Hurricane #8	3			0.19
June 18, 1934	Hurricane #2	1			1.56
November 17-20, 1939	Hurricane #2	1			0.33
September 13-14, 1945	Hurricane #9	4			1.28(24hr) / 1.77(total)
November 28-29, 1949	Hurricane #2	4			0.54
September 1-2, 1952	Able	2			0.1
October 15, 1954	Hazel	4			3.56
November 13, 1955	Connie	4			1.93
June 28-30, 1957	Audrey	4			1.3
September 30-October 1, 1959	Gracie	4			1.18(24hr)/ 1.21(total)
September 11-13, 1965	Betsy	4			1.8
June 24-27, 1968	TS Candy	0			1.52
June 20-25, 1972	Agnes	1	DR-340	Y	2.6
July 9-10, 1979	Bob	1			0.36
July 28-29, 1979	TS Claudette	0			0.77
September 5-6, 1979	David	5			0.13
September 10-12, 1979	Frederic	4			1.86
October 8, 1985	Gloria	2	DR-745	N	UNK
November 28-29, 1988	TS Chris	0			0.74
September 22-23, 1989	Hugo	5			1.49 (t) snow

SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Date	Name	Category at Landfall	FEMA Declaration Number	County Designated?	Precip. (in)
September 25-27, 1992	TS Danielle	0			0.29
November 18-19, 1994	TS Beryl	0			0.34
November 4-5, 1995	Erin	1			1.14
October 3-6, 1995	Opal	4			1.42
September 6-7, 1996	Fran	3	DR-1138	N	1.52(24hr)/ 1.69(total)
September 7, 1999	Dennis	2	DR-1298	N	0.33
September 20-21, 2000	Gordon	1			0.39
September 26-27, 2002	Isidore	3			2.29
September 18-19, 2003	Isabel	2	DR-1497	N	1.24
September 8-9, 2004	Frances	2	DR-1555	Y	3.60(24hr)/ 3.83(total)
September 17, 2004	Ivan	4	DR-1557	Y	5.95
November 29-31, 2005	Katrina	4	EM-3235	Y	1.93
October 7-8, 2005	TS Tammy	0			0.71
September 1-2, 2006	TS Ernesto	0			0.57
June 3-4, 2007	TS Barry	0			0.28
November 27-28, 2008	TS Fay	0			0.9
November 26, 2011	Irene	1	DR-4025 EM-3339	N	UNK
September 8, 2011	TS Lee	0	DR-4030 EM-3340	N	UNK
October 26, 2012	Post-TS Sandy	0	DR-4099 EM-3356	N Y	UNK

Source: NWS 2012, FEMA 2013

Note: UNK = “unknown”



Between 1954 and 2013, the Federal Emergency Management Agency (FEMA) has included the Commonwealth of Pennsylvania in 11 hurricane or tropical-storm related major disaster (DR) or emergency (EM) declarations, classified as one or a combination of the following incident types: tropical storm, hurricane, tropical depression, flash flooding, and severe storms. Generally, these disasters cover a wide region of the Commonwealth; therefore, they may have affected many counties, but not all counties may have been included in the declaration. Of those events, sources indicate that Westmoreland County has been included in five declarations (FEMA 2014).

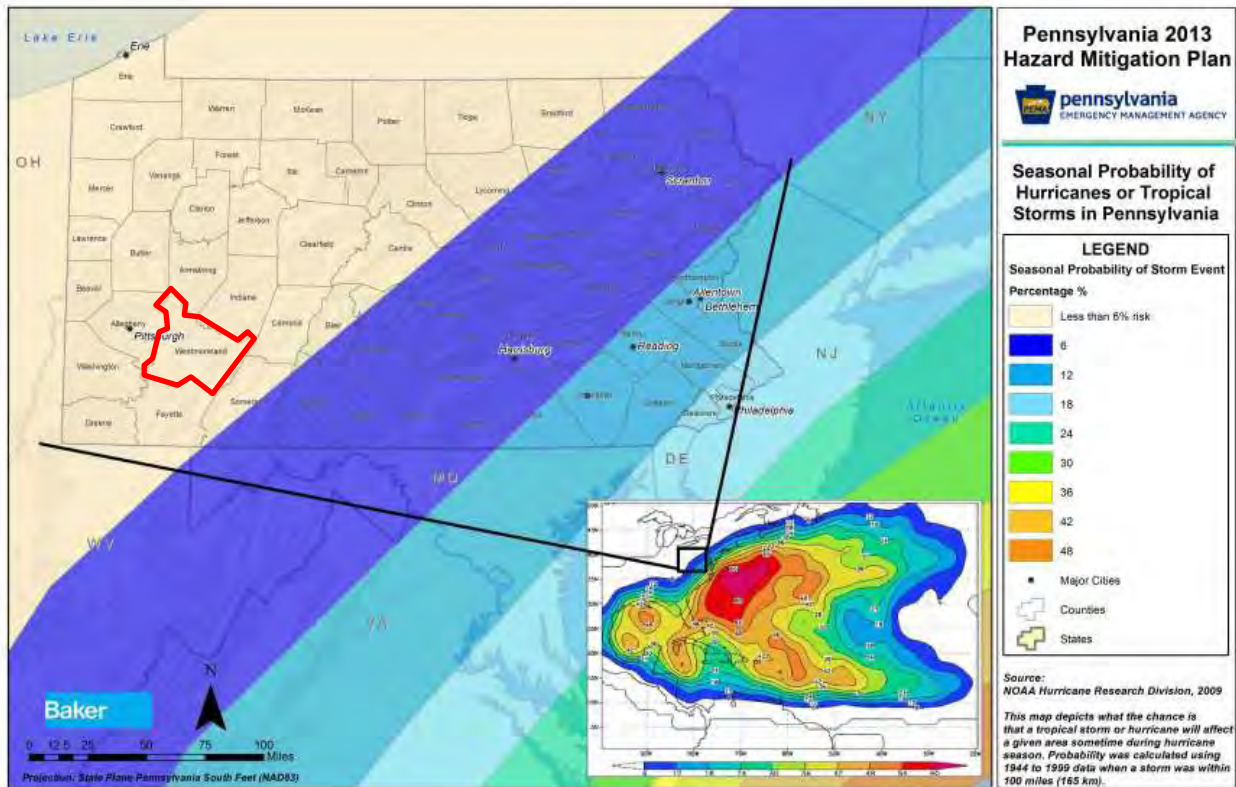
Hurricanes Agnes and Ivan had particularly devastating effects on Westmoreland County. When Hurricane Agnes hit in 1972, it became a deep low-pressure system that stalled over Eastern Pennsylvania. Serious and life-threatening flash flooding occurred throughout the County, where up to 13.5 inches of rain was measured near Mt. Pleasant (NOAA 1972). This event led to the County's participation in the NFIP.

Hurricane Ivan dumped up to nine inches of rain across Westmoreland County and western Pennsylvania. The precipitation resulted in flooded roads, mudslides, and damaged bridges and residential structures (Powell date unknown).

#### 4.3.7.4 Future Occurrence

The NOAA Hurricane Research Division published a map used in the Commonwealth of Pennsylvania's Hazard Mitigation Plan (included as Table 4.3.7-4) showing the chance that a tropical storm or hurricane (of any intensity) will affect a given area during the hurricane season (June to November). Based on the Commonwealth Plan, Westmoreland County has less than a 6 percent chance that a tropical storm or hurricane will affect the area each year. Based upon the Risk Factor Methodology Probability Criteria, probability of a hurricane or tropical storm hazard within Westmoreland County is classified as *unlikely*.



**Figure 4.3.7-4. Probability of a Hurricane or Tropical Storm across Pennsylvania**

Source: PEMA 2013

Note: The red line was added to indicate the location of Westmoreland County

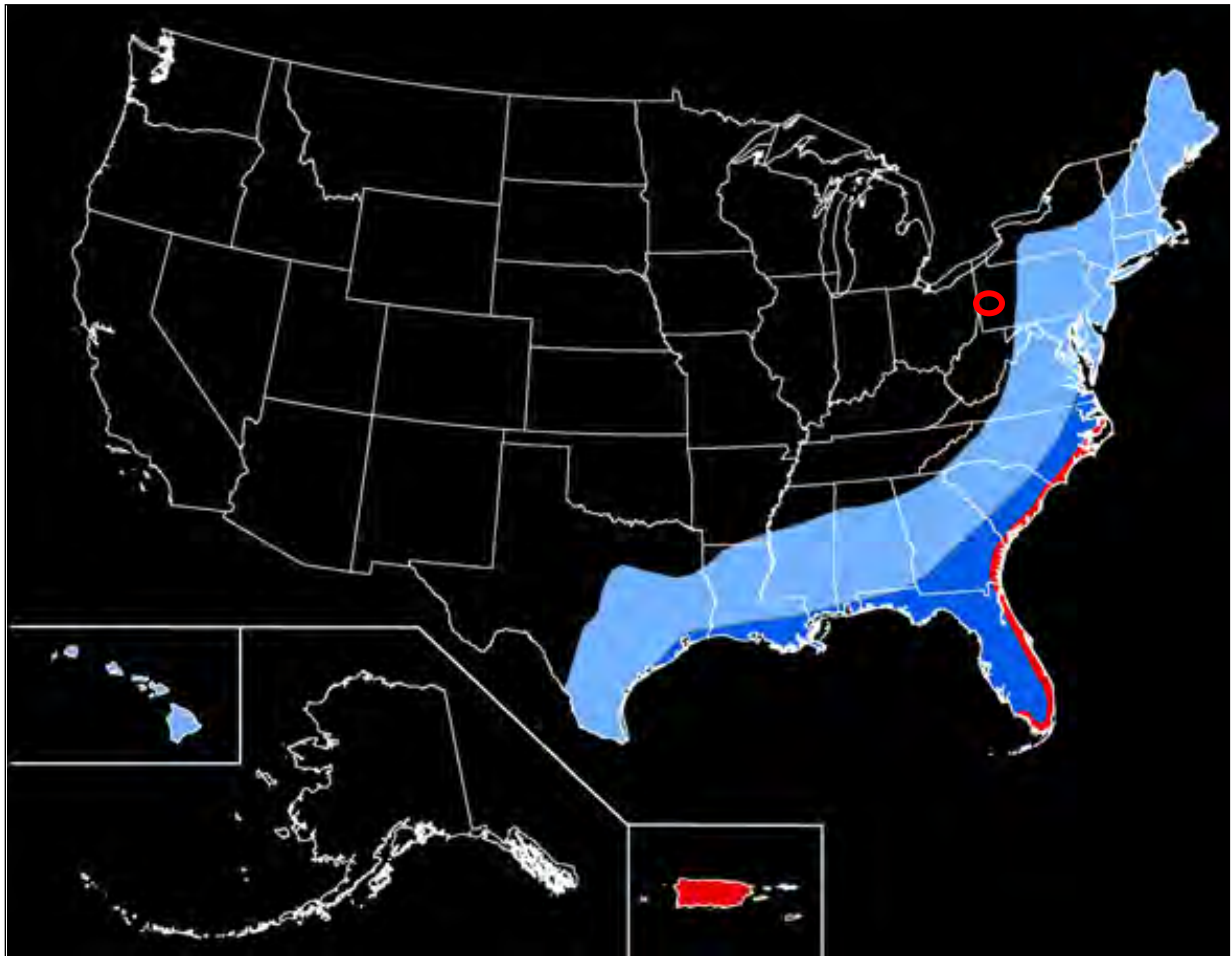
As indicated above, tropical storms are often categorized by return frequencies depicting the level of an event (such as a 100-year storm). However, several shortcomings are related to attempting to categorize storms by return frequencies. First, the historical record of storms is relatively short to accurately assess the true long-term frequency of long period events. Most records only go back approximately 100 years, which is an insufficient number to make predictions of this nature. A simple comparison of the ineffectiveness of this type of determination would be sampling 20 ocean waves and making a conclusion of the full range of wave amplitudes in that part of the ocean. Second, sea level rise changes the vulnerability such that storms representing an average 100-year frequency will occur considerably more often, and the ability to quantify this information depends on the accuracy of predictions about sea level rise. Third, coastal flood impacts can vary significantly from one locality to another, depending on factors such as onshore wind component and incidence of wave activity to the coastline. Fourth, a storm may have been a once-per-100-year-storm for coastal flooding, but a once in 10-year storm for wind or snowfall or rainfall. Also, the impact of a storm can be compounded if it has multiple severe dimensions (major coastal flooding in addition to very heavy snow and extreme winds) or if it affects such a large area that mutual aid cannot be exercised. Fifth, development along the coastline or in other vulnerable areas can significantly increase the impact of a storm. Thus, the same storm in 1950 might not have garnered as much attention then as it would now with the increased coastal development.

According to the NWS, only four hurricanes, which reached Category 5 before U.S. landfall, have affected western Pennsylvania. These hurricanes include 1928 Hurricane #5 (Category 4 at U.S. landfall), 1979 Hurricane David (Category 2 at U.S. landfall), 1989 Hurricane Hugo (Category 4 at U.S. landfall), and 2005 Hurricane Katrina (Category 3 at U.S. landfall). On average, this part of the Commonwealth

experiences rainfall from the remnants of tropical storms or hurricanes about two times every 5 years (NWS, 2012).

Additionally, as also referenced previously in this section, the same difficulty exists as it relates to the meaning of a “100-year storm” or a return frequency of 100 years. Figure illustrates the number of hurricanes expected to occur during a 100-year period. According to this map, western Pennsylvania, including Westmoreland County, can expect fewer than 20 hurricanes during a 100-year return period.

*Figure 4.3.7-5. Number of Hurricanes for a 100-year Return Period*



Source: USGS, 2005

Notes: The red circle indicates the approximate location of Westmoreland County

The number of hurricanes expected to occur during a 100-year MRP based on historical data (map is not to scale):

- Black area = >20
- Light blue area = 20 to 40
- Dark blue area = 40 to 60
- Red area = more than 60.

### 4.3.7.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the identified hazard area. The entire County has been identified as the hazard area for hurricanes and tropical storms. Therefore, all assets in the County (population, structures, critical facilities and lifelines), as described in the County Profile (Section 2), are vulnerable. The following text evaluates and estimates the potential impact of hurricanes and tropical storms on the County, including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on: (1) life, safety and health of residents, (2) general building stock, (3) critical facilities, (4) economy, and (5) future growth and development
- Further data collections that will assist understanding of this hazard over time.

#### 4.3.7.1.5 Overview of Vulnerability

The high winds and air speeds of a hurricane or any severe storm often result in power outages, disruptions to transportation corridors and equipment, loss of workplace access, significant property damage, injuries and loss of life, and the need to shelter and care for individuals affected by the events. A large amount of damage can be inflicted by trees, branches, and other objects that fall onto power lines, buildings, roads, vehicles, and in some cases, people. The risk assessment for hurricanes and tropical storms evaluates available data for a range of storms included in this hazard category.

Based on the inland location of the County, the potential losses associated with hurricanes and tropical storms would be from wind and rain. Secondary flooding associated with the torrential downpours during hurricanes and tropical storms is also a concern in the County.

The entire inventory of the County is at risk of being damaged or lost through the impacts of severe wind. Certain areas, infrastructure, and types of building are at greater risk than others because of their proximity to falling hazards or their manner of construction. Potential losses associated with high wind events were calculated for the County for two probabilistic hurricane events: the 100-year and 500-year MRP hurricane events. The impacts on population, existing structures, critical facilities, and the economy are presented below, after a summary of the data and methodology used.

#### 4.3.7.2.5 Data and Methodology

After historical data had been reviewed, the HAZUS-MH methodology and model were used to analyze the hurricane and tropical storm hazard for Westmoreland County. Data used to assess this hazard include data available in the HAZUS-MH 2.1 hurricane model, professional knowledge, information provided by the Working Group, and input from the public.

A probabilistic scenario was run for Westmoreland County for annualized losses and the 100- and 500-year MRPs were examined for the wind and severe storm hazard. These results are shown in Table 4.3.7-5.

HAZUS-MH contains data on historical hurricane events and wind speeds. It also includes surface roughness and vegetation (tree coverage) maps for the area. Surface roughness and vegetation data support modeling of wind force across various types of land surfaces. Hurricane and inventory data available in HAZUS-MH were used to evaluate potential losses from the 100- and 500-year MRP events

(severe wind impacts). Other than updated data for the general building stock and critical facility inventories, the default data in HAZUS-MH 2.1 were the best available for use in this evaluation.

#### 4.3.7.3.5 Impact on Life, Health, and Safety

The impact of a severe storm on life, health, and safety depends on several factors, including the severity of the event and whether adequate warning time was provided to residents. It is assumed that the entire County's population (U.S. Census 2010 population of 365,169 people) is exposed to this storm hazard.

Residents may be displaced or require temporary to long-term sheltering. In addition, downed trees, damaged buildings, and debris carried by high winds can lead to injury or loss of life. Socially vulnerable populations are most susceptible, based on a number of factors including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing. HAZUS-MH estimates there will be zero people displaced and zero people who may require temporary shelter as a result of a 100-year MRP event. HAZUS-MH estimates zero households will be displaced and zero will require short-term sheltering for a 500-year MRP event. Sheltering estimates are based on the default 2000 U.S. Census data in HAZUS-MH. Therefore, these are conservative estimates given the increase in population as indicated by the 2010 U.S. Census data.

Economically disadvantaged populations are more vulnerable because they are likely to evaluate their risk and make decisions based on the major economic impact to their family and may not have funds to evacuate. The population over the age of 65 is also more vulnerable and, physically, they may have more difficulty evacuating. The elderly are considered most vulnerable because they require extra time or outside assistance during evacuations and are more likely to seek or need medical attention which may not be available due to isolation during a storm event. Please refer to Section 4 for the statistics of these populations in the County.

#### 4.3.7.4.5 Impact on General Building Stock

After the population exposed to the severe storm hazard has been considered, the general building stock replacement value exposed to and damaged by 100- and 500-year MRP events was examined. Wind-only impacts from a severe storm are reported based on the probabilistic hurricane runs in HAZUS-MH 2.1. Potential damage is the modeled loss that could occur to the exposed inventory, including damage to structural and content value based on the wind-only impacts associated with a hurricane (using the methodology described in Section 5.1).

It is assumed that the entire County's general building stock is exposed to the severe storm wind hazard (greater than \$27.1 billion structure only). Expected building damage was evaluated by HAZUS across the following wind damage categories: no damage/very minor damage, minor damage, moderate damage, severe damage, and total destruction.

Table summarizes the definition of the damage categories.



**Table 4.3.7-4. Description of Damage Categories**

Qualitative Damage Description	Roof Cover Failure	Window Door Failures	Roof Deck	Missile Impacts on Walls	Roof Structure Failure	Wall Structure Failure
<p><b>No Damage or Very Minor Damage</b></p> <p>Little of no visible damage from the outside.</p> <p>No broken windows, or failed roof deck.</p> <p>Minimal loss of roof over, with no or very limited water penetration.</p>	≤ 2%	No	No	No	No	No
<p><b>Minor Damage</b></p> <p>Maximum of one broken window, door, or garage door. Moderate roof cover loss that can be covered to prevent additional water entering the building. Marks or dents on walls requiring painting or patching for repair.</p>	> 2% and ≤ 15%	One window, door, or garage door failure	No	< 5 Impacts	No	No
<p><b>Moderate Damage</b></p> <p>Major roof cover damage, moderate window breakage. Minor roof sheathing failure.</p> <p>Some resulting damage to interior of building from water.</p>	> 15% and ≤ 50%	> the larger of 20% & 3 and ≤ 50%	1 to 3 Panels	Typically 5 to 10 Impacts	No	No
<p><b>Severe Damage</b></p> <p>Major window damage or roof sheathing loss.</p> <p>Major roof cover loss. Extensive damage to interior from water.</p>	> 50%	> one and ≤ the larger of 20% & 3	> 3 and ≤ 25%	Typically 10 to 20 Impacts	No	No
<p><b>Destruction</b></p> <p>Complete roof failure or failure of wall frame. Loss of more than 50 percent of roof sheathing.</p>	Typically > 50%	> 50%	> 25%	Typically > 20 Impacts	Yes	Yes

Source: HAZUS-MH Hurricane Technical Manual

As noted earlier in the profile, HAZUS estimates the 100-year MRP peak gust wind speeds for Westmoreland County to be 40 to 50 mph, which equates to a Tropical Storm. As depicted in Table 4.3.7-5 HAZUS-MH 2.1 estimates \$0 in structure damages, for both residential and commercial building, across the County for the 100-year MRP event. Residential buildings comprise the majority of the building inventory and are estimated to experience all of the damage.

HAZUS estimates the 500-year MRP peak gust wind speeds for Westmoreland County to range from 52 to 77 mph. This wind speed equates to a Category 1 hurricane and \$6.7 million in damages to the general building stock (structure only). This amount is less than 1 percent of the County's building inventory. The residential buildings are estimated to experience the majority of the damage.

Table 4.3.7-5 summarizes the building value (structure only) damage estimated for the 100- and 500-year MRP wind-only events by occupancy class. Please note that the table below contains a large amount of data requiring columns, depicting the building type, to be displayed differently on each page change.



**Table 4.3.7-5. Estimated Building Replacement Value (Structure Only) Damaged by the 100-Year and 500-Year Mean Return Period Hurricane-Related Winds for All Occupancy Classes**

Municipality	Total Building Replacement Value (Structure Only)	Total Building Damage (All Occupancies)		Residential Buildings		Commercial Buildings	
		100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
		Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss
Adamsburg Borough	15,958,000	0	1,133	0	1,133	0	-
Allegheny Township	523,902,000	0	19	0	19	0	-
Arnold	403,615,000	0	-	0	-	0	-
Arona Borough	22,313,000	0	2,114	0	2,114	0	-
Avonmore Borough	94,443,000	0	4,778	0	4,778	0	-
Bell Township	139,526,000	0	13,656	0	13,656	0	-
Bolivar Borough	25,972,000	0	36,842	0	35,739	0	813
Cook Township	143,085,000	0	175,317	0	174,813	0	469
Delmont Borough	212,924,000	0	14,382	0	14,382	0	-
Derry Borough	152,569,000	0	101,131	0	98,038	0	1,411
Derry Township	823,531,000	0	425,796	0	409,366	0	7,171
Donegal Township	159,683,000	0	133,622	0	128,806	0	2,836
Donegal Borough	9,194,000	0	11,355	0	10,856	0	69
East Huntingdon Township	462,907,000	0	128,769	0	121,381	0	5,290
East Vandergrift Borough	42,443,000	0	3,165	0	3,165	0	-
Export Borough	85,483,000	0	4,570	0	4,570	0	-
Fairfield Township	129,394,000	0	202,608	0	200,016	0	1,284
Greensburg	1,508,449,000	0	140,586	0	140,586	0	-
Hempfield Township	2,757,130,000	0	373,789	0	373,109	0	350
Hunker Borough	20,425,000	0	2,001	0	2,001	0	-

SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Total Building Replacement Value (Structure Only)	Total Building Damage (All Occupancies)		Residential Buildings		Commercial Buildings	
		100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
		Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss
Hyde Park Borough	67,647,000	0	7	0	7	0	-
Irwin Borough	345,585,000	0	8,957	0	8,957	0	-
Jeannette	781,064,000	0	65,401	0	65,401	0	-
Latrobe	783,720,000	0	277,730	0	247,656	0	13,790
Laurel Mountain Borough	22,040,000	0	27,282	0	26,206	0	914
Ligonier Borough	165,937,000	0	144,109	0	129,715	0	9,530
Ligonier Township	673,987,000	0	756,632	0	731,605	0	21,520
Lower Burrell	905,687,000	0	787	0	787	0	-
Loyalhanna Township	108,848,000	0	9,521	0	9,521	0	-
Madison Borough	43,709,000	0	3,525	0	3,525	0	-
Manor Borough	192,352,000	0	2,359	0	2,359	0	-
Monessen	564,601,000	0	-	0	-	0	-
Mount Pleasant Borough	556,861,000	0	115,881	0	85,634	0	18,679
Mount Pleasant Township	784,467,000	0	326,574	0	301,934	0	15,399
Murrysville	1,655,684,000	0	25,025	0	25,025	0	-
New Alexandria Borough	60,202,000	0	17,621	0	15,180	0	1,714
New Florence Borough	41,157,000	0	70,442	0	68,337	0	1,249
New Kensington	1,192,499,000	0	-	0	-	0	-
New Stanton Borough	184,398,000	0	11,478	0	11,479	0	-
North Belle Vernon Borough	156,801,000	0	-	0	-	0	-



SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Total Building Replacement Value (Structure Only)	Total Building Damage (All Occupancies)		Residential Buildings		Commercial Buildings	
		100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
		Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss
North Huntingdon Township	2,090,045,000	0	40,464	0	40,464	0	-
North Irwin Borough	40,944,000	0	-	0	-	0	-
Oklahoma Borough	57,905,000	0	7,107	0	7,107	0	-
Penn Borough	23,205,000	0	1,725	0	1,725	0	-
Penn Township	1,381,573,000	0	68,910	0	68,639	0	265
Rostraver Township	700,781,000	0	1,973	0	1,973	0	-
Salem Township	653,186,000	0	47,759	0	47,502	0	213
Scottdale Borough	435,262,000	0	101,664	0	86,300	0	5,050
Seward Borough	33,895,000	0	43,992	0	41,311	0	1,530
Sewickley Township	314,175,000	0	10,909	0	10,909	0	-
Smithton Borough	76,149,000	0	2,541	0	2,541	0	-
South Greensburg Borough	212,824,000	0	22,126	0	22,126	0	-
South Huntingdon Township	330,617,000	0	35,667	0	34,017	0	1,651
Southwest Greensburg Borough	194,304,000	0	26,130	0	26,131	0	-
St. Clair Township	65,491,000	0	103,035	0	101,730	0	650
Sutersville Borough	36,553,000	0	3	0	3	0	-
Trafford Borough	322,151,000	0	5	0	5	0	-
Unity Township	1,580,092,000	0	578,378	0	539,731	0	20,238
Upper Burrell Township	171,180,000	0	11	0	11	0	-
Vandergrift Borough	333,559,000	0	12,731	0	12,731	0	-
Washington Township	437,736,000	0	18,143	0	18,143	0	-



SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Total Building Replacement Value (Structure Only)	Total Building Damage (All Occupancies)		Residential Buildings		Commercial Buildings	
		100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
		Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss	Probable Loss
West Leechburg Borough	84,386,000	0	10	0	10	0	-
West Newton Borough	190,952,000	0	-	0	-	0	-
Youngstown Borough	30,385,000	0	17,237	0	15,984	0	1,000
Youngwood Borough	297,671,000	0	18,359	0	18,359	0	-
<b>Westmoreland County Total</b>	<b>27,115,213,000</b>	<b>0</b>	<b>4,797,841</b>	<b>0</b>	<b>4,569,305</b>	<b>0</b>	<b>133,084</b>



SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Industrial Buildings		Agriculture Buildings		Religious Buildings		Government Buildings		Education Buildings	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
Adamsburg Borough	0	0	0	0	0	0	0	0	0	0
Allegheny Township	0	0	0	0	0	0	0	0	0	0
Arnold	0	0	0	0	0	0	0	0	0	0
Arona Borough	0	0	0	0	0	0	0	0	0	0
Avonmore Borough	0	0	0	0	0	0	0	0	0	0
Bell Township	0	0	0	0	0	0	0	0	0	0
Bolivar Borough	0	36	0	14	0	0	0	240	0	0
Cook Township	0	36	0	0	0	0	0	0	0	0
Delmont Borough	0	0	0	0	0	0	0	0	0	0
Derry Borough	0	576	0	0	0	586	0	357	0	165
Derry Township	0	5,991	0	103	0	1,321	0	989	0	853
Donegal Township	0	776	0	205	0	244	0	491	0	264
Donegal Borough	0	0	0	0	0	303	0	16	0	111
East Huntingdon Township	0	1,347	0	0	0	368	0	95	0	287
East Vandergrift Borough	0	0	0	0	0	0	0	0	0	0
Export Borough	0	0	0	0	0	0	0	0	0	0
Fairfield Township	0	84	0	251	0	542	0	39	0	393
Greensburg	0	0	0	0	0	0	0	0	0	0
Hempfield Township	0	251	0	0	0	60	0	8	0	11



SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Industrial Buildings		Agriculture Buildings		Religious Buildings		Government Buildings		Education Buildings	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
Hunker Borough	0	0	0	0	0	0	0	0	0	0
Hyde Park Borough	0	0	0	0	0	0	0	0	0	0
Irwin Borough	0	0	0	0	0	0	0	0	0	0
Jeannette	0	0	0	0	0	0	0	0	0	0
Latrobe	0	13,313	0	0	0	1,735	0	631	0	605
Laurel Mountain Borough	0	70	0	13	0	68	0	12	0	0
Ligonier Borough	0	926	0	58	0	2,011	0	1,144	0	725
Ligonier Township	0	1,413	0	346	0	693	0	380	0	674
Lower Burrell	0	0	0	0	0	0	0	0	0	0
Loyalhanna Township	0	0	0	0	0	0	0	0	0	0
Madison Borough	0	0	0	0	0	0	0	0	0	0
Manor Borough	0	0	0	0	0	0	0	0	0	0
Monessen	0	0	0	0	0	0	0	0	0	0
Mount Pleasant Borough	0	9,718	0	0	0	1,235	0	245	0	371
Mount Pleasant Township	0	6,907	0	56	0	978	0	149	0	1,153
Murrysville	0	0	0	0	0	-	0	-	0	0
New Alexandria Borough	0	80	0	0	0	360	0	39	0	249
New Florence Borough	0	61	0	0	0	409	0	70	0	315
New Kensington	0	0	0	0	0	0	0	0	0	0
New Stanton Borough	0	0	0	0	0	0	0	0	0	0





SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Industrial Buildings		Agriculture Buildings		Religious Buildings		Government Buildings		Education Buildings	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
North Belle Vernon Borough	0	0	0	0	0	0	0	0	0	0
North Huntingdon Township	0	0	0	0	0	0	0	0	0	0
North Irwin Borough	0	0	0	0	0	0	0	0	0	0
Oklahoma Borough	0	0	0	0	0	0	0	0	0	0
Penn Borough	0	0	0	0	0	0	0	0	0	0
Penn Township	0	6	0	0	0	0	0	0	0	0
Rostraver Township	0	0	0	0	0	0	0	0	0	0
Salem Township	0	44	0	0	0	0	0	0	0	0
Scottdale Borough	0	7,821	0	0	0	1,373	0	634	0	486
Seward Borough	0	44	0	0	0	101	0	1,006	0	0
Sewickley Township	0	0	0	0	0	0	0	0	0	0
Smithton Borough	0	0	0	0	0	0	0	0	0	0
South Greensburg Borough	0	0	0	0	0	0	0	0	0	0
South Huntingdon Township	0	0	0	0	0	0	0	0	0	0
Southwest Greensburg Borough	0	0	0	0	0	0	0	0	0	0
St. Clair Township	0	35	0	9	0	463	0	147	0	0
Sutersville Borough	0	0	0	0	0	0	0	0	0	0
Trafford Borough	0	0	0	0	0	0	0	0	0	0



SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Industrial Buildings		Agriculture Buildings		Religious Buildings		Government Buildings		Education Buildings	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
Unity Township	0	12,127	0	50	0	2,513	0	1,426	0	2,293
Upper Burrell Township	0	0	0	0	0	0	0	0	0	0
Vandergrift Borough	0	0	0	0	0	0	0	0	0	0
Washington Township	0	0	0	0	0	0	0	0	0	0
West Leechburg Borough	0	0	0	0	0	0	0	0	0	0
West Newton Borough	0	0	0	0	0	0	0	0	0	0
Youngstown Borough	0	210	0	8	0	35	0	0	0	0
Youngwood Borough	0	0	0	0	0	0	0	0	0	0
<b>Westmoreland County</b>	<b>0</b>	<b>61,873</b>	<b>0</b>	<b>1,111</b>	<b>0</b>	<b>15,399</b>	<b>0</b>	<b>8,115</b>	<b>0</b>	<b>8,954</b>

Source: HAZUS-MH 2.1

Notes: B = Borough; GBS = General Building Stock; RCV = Replacement Cost Value; T = Town



Because of differences in building construction, residential structures are generally more susceptible to wind damage than are commercial and industrial structures. Wood and masonry buildings in general, regardless of their occupancy class, tend to experience more damage than concrete or steel buildings. The damage counts include buildings damaged at all severity levels from minor damage to total destruction. Total dollar damage reflects the overall impact to buildings at an aggregate level.

Of the more than \$19.6 billion in total residential replacement value (structure) for the entire County, an estimated \$0 in residential building damage can be anticipated for the 100-year event and \$4.6 million in residential building damage can be anticipated for the 500-year event. Residential building damage accounts for 95 percent of total damages for the 500-year wind-only event. This information illustrates residential structures are the most vulnerable to the wind hazard.

Annualized losses were also examined for Westmoreland County. A total of \$0 is estimated as the annualized loss for the entire County. Please note that annualized loss does not predict what losses will occur in any particular year.

#### 4.3.7.5.5 Impact on Critical Facilities

HAZUS-MH estimates the probability that critical facilities (medical facilities, fire/EMS, police, EOC, schools, and user-defined facilities such as shelters and municipal buildings) may sustain damage as a result of 100-year and 500-year MRP wind-only events. Additionally, HAZUS-MH estimates the loss of use for each facility in number of days. HAZUS-MH estimates a less than 1 percent chance that critical facilities in Westmoreland County will experience minor damage; and continuity of operations at these facilities will not be interrupted (loss of use is estimated to be zero days) as a result of a 100-year MRP event.

At this time, HAZUS-MH 2.1 does not estimate losses to transportation lifelines and utilities as part of the hurricane model. Transportation lifelines are not considered particularly vulnerable to the wind hazard; they are more vulnerable to cascading effects such as flooding, and falling debris. Impacts to transportation lifelines affect both short-term (evacuation activities) and long-term (day-to-day commuting) transportation needs.

Utility structures could suffer damage associated with falling tree limbs or other debris. These impacts can result in the loss of power, which can impair business operations and can affect heating or cooling provision to citizens (including the young and elderly, who are particularly vulnerable to temperature-related health impacts).

#### 4.3.7.6.5 Impact on Economy

Severe storms also affect the economy, including loss of business function (for example, to tourism and recreation), damage to inventory, relocation costs, wage loss, and rental loss from repair or replacement of buildings. HAZUS-MH estimates the total economic loss associated with each storm scenario (direct building losses and business interruption losses). Direct building losses are the estimated costs to repair or replace the damage caused to the building. These losses are reported in the “Impact on General Building Stock” section discussed earlier. Business interruption losses are the losses associated with the inability to operate a business because of the wind damage sustained during the storm or the temporary living expenses for those displaced from their home because of the event.

HAZUS-MH estimates \$0 in relocation costs for the 100-year MRP wind event. HAZUS-MH estimates \$55,000 in business interruption losses for Westmoreland County for the 500-year MRP wind only event,

which includes loss of income, relocation costs, rental costs, and lost wages. Further HAZUS-MH estimates \$0 in loss of inventory.

HAZUS-MH 2.1 also estimates the amount of debris that may be produced a result of the 100- and 500-year MRP wind events. Table estimates the debris produced. , This estimate is likely conservative and may be higher if multiple impacts occur because the estimated debris production does not include flooding. According to the HAZUS-MH Hurricane User Manual: *‘The Eligible Tree Debris columns provide estimates of the weight and volume of downed trees that would likely be collected and disposed at public expense. As discussed in Chapter 12 of the HAZUS-MH Hurricane Model Technical Manual, the eligible tree debris estimates produced by the Hurricane Model tend to underestimate reported volumes of debris brought to landfills for a number of events that have occurred over the past several years. This indicates that there may be other sources of vegetative and non-vegetative debris that are not currently being modeled in HAZUS. For landfill estimation purposes, it is recommended that the HAZUS debris volume estimate be treated as an approximate lower bound. Based on actual reported debris volumes, it is recommended that the HAZUS results be multiplied by three to obtain an approximate upper bound estimate. It is also important to note that the Hurricane Model assumes a bulking factor of 10 cubic yards per ton of tree debris. If the debris is chipped prior to transport or disposal, a bulking factor of 4 is recommended. Thus, for chipped debris, the eligible tree debris volume should be multiplied by 0.4’.*

**Table 4.3.7-6. Debris Production for 100- and 500-Year Mean Return Period Hurricane-Related Winds**

Municipality	Brick and Wood (tons)		Concrete and Steel (tons)		Tree (tons)		Eligible Tree Volume (cubic yards)	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
Adamsburg Borough	0	0	0	0	0	1	0	16
Allegheny Township	0	0	0	0	0	-	0	4
Arnold	0	0	0	0	0	-	0	-
Arona Borough	0	0	0	0	0	-	0	4
Avonmore Borough	0	0	0	0	0	-	0	2
Bell Township	0	0	0	0	0	2	0	15
Bolivar Borough	0	0	0	0	0	2	0	57
Cook Township	0	10	0	0	0	687	0	6,876
Delmont Borough	0	0	0	0	0	4	0	41
Derry Borough	0	1	0	0	0	7	0	119
Derry Township	0	11	0	0	0	377	0	3,752
Donegal Township	0	8	0	0	0	877	0	8,790
Donegal Borough	0	0	0	0	0	24	0	248
East Huntingdon Township	0	3	0	0	0	288	0	2,875
East Vandergrift Borough	0	0	0	0	0	-	0	-
Export Borough	0	0	0	0	0	1	0	13

SECTION 4.3.7: RISK ASSESSMENT – HURRICANE AND TROPICAL STORM

Municipality	Brick and Wood (tons)		Concrete and Steel (tons)		Tree (tons)		Eligible Tree Volume (cubic yards)	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
Fairfield Township	0	13	0	0	0	1,919	0	19,204
Greensburg	0	0	0	0	0	8	0	85
Hempfield Township	0	0	0	0	0	80	0	810
Hunker Borough	0	0	0	0	0	-	0	-
Hyde Park Borough	0	0	0	0	0	-	0	-
Irwin Borough	0	0	0	0	0	-	0	-
Jeannette	0	0	0	0	0	4	0	58
Latrobe	0	11	0	0	0	20	0	215
Laurel Mountain Borough	0	1	0	0	0	8	0	81
Ligonier Borough	0	5	0	0	0	10	0	173
Ligonier Township	0	53	0	0	0	1,593	0	15,994
Lower Burrell	0	0	0	0	0	-	0	-
Loyalhanna Township	0	0	0	0	0	-	0	1
Madison Borough	0	0	0	0	0	-	0	0
Manor Borough	0	0	0	0	0	-	0	-
Monessen	0	0	0	0	0	-	0	-
Mount Pleasant Borough	0	3	0	0	0	6	0	72
Mount Pleasant Township	0	3	0	0	0	405	0	4,071
Murrysville	0	0	0	0	0	4	0	43
New Alexandria Borough	0	0	0	0	0	3	0	23
New Florence Borough	0	3	0	0	0	11	0	136
New Kensington	0	0	0	0	0	-	0	-
New Stanton Borough	0	0	0	0	0	-	0	15
North Belle Vernon Borough	0	0	0	0	0	-	0	-
North Huntingdon Township	0	0	0	0	0	-	0	-
North Irwin Borough	0	0	0	0	0	-	0	-
Oklahoma Borough	0	0	0	0	0	-	0	-
Penn Borough	0	0	0	0	0	-	0	3
Penn Township	0	0	0	0	0	1	0	13
Rostraver Township	0	0	0	0	0	-	0	-
Salem Township	0	0	0	0	0	24	0	235
Scottdale Borough	0	1	0	0	0	6	0	85
Seward Borough	0	1	0	0	0	16	0	164
Sewickley Township	0	0	0	0	0	-	0	-
Smithton Borough	0	0	0	0	0	-	0	2
South Greensburg Borough	0	0	0	0	0	1	0	13



Municipality	Brick and Wood (tons)		Concrete and Steel (tons)		Tree (tons)		Eligible Tree Volume (cubic yards)	
	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year	100 Year	500 Year
South Huntingdon Township	0	0	0	0	0	2	0	25
Southwest Greensburg	0	0	0	0	0	-	0	-
St. Clair Township	0	8	0	0	0	816	0	8,234
Sutersville Borough	0	0	0	0	0	-	0	-
Trafford Borough	0	0	0	0	0	-	0	-
Unity Township	0	13	0	0	0	469	0	4,694
Upper Burrell Township	0	0	0	0	0	-	0	-
Vandergrift Borough	0	0	0	0	0	-	0	1
Washington Township	0	0	0	0	0	-	0	-
West Leechburg Borough	0	0	0	0	0	-	0	-
West Newton Borough	0	0	0	0	0	-	0	1
Youngstown Borough	0	1	0	0	0	5	0	41
Youngwood Borough	0	0	0	0	0	1	0	5
<b>Westmoreland County Total</b>	<b>0</b>	<b>149</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7,682</b>	<b>0</b>	<b>77,313</b>

Source: HAZUS-MH 2.1

#### 4.3.7.7.5 Future Growth and Development

As discussed and illustrated in Section 2, areas targeted for future growth and development have been identified across Westmoreland County. Any areas of growth could be affected by the severe storm hazard because the entire County is exposed and vulnerable to the wind hazard associated with severe storms.

#### 4.3.7.8.5 Additional Data and Next Steps

Over time, Westmoreland County will obtain additional data to support the analysis of this hazard. Data that will support the analysis would include additional detail on past hazard events and impacts, specific building information such as type of construction, and details on protective features (for example, hurricane straps). In addition, information on particular buildings or infrastructure age or year built would be helpful in future analysis of this hazard. Mitigation strategies are provided in Section 6 of this plan.



### 4.3.8 Landslide

This section provides a profile and vulnerability assessment for the landslide hazard. According to the U.S. Geological Survey (USGS), “ground failure” is the term used to describe zones of ground cracking, fissuring, and localized horizontal and vertical permanent ground displacement. This displacement may be caused by surface rupture along faults; secondary movement on shallow faults; shaking-induced compaction of natural deposits in sedimentary basins and river valleys; liquefaction of loose, sandy sediment (USGS, 2013); landslides; and land subsidence and sinkholes. Westmoreland County is vulnerable to the ground failure hazard that includes, but is not limited to, landslides, which are further defined below.

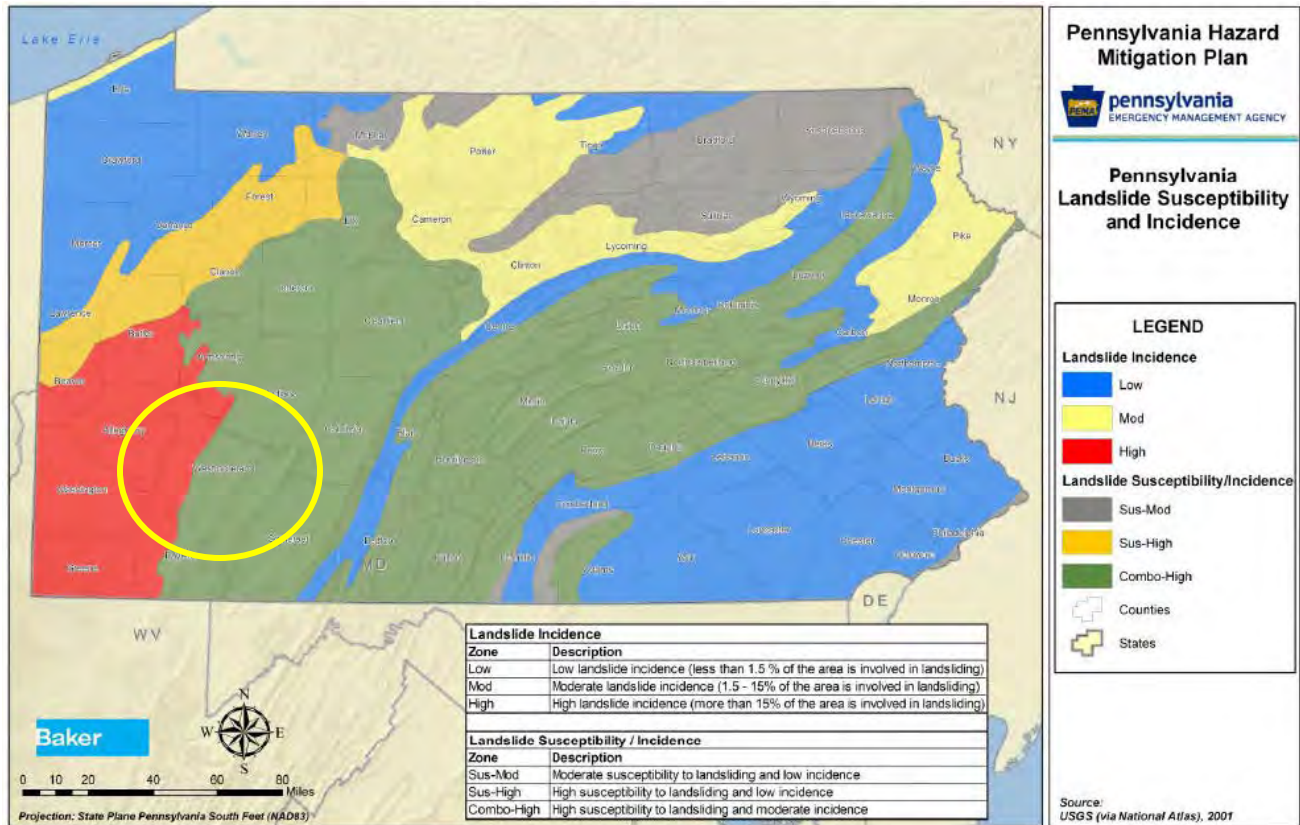
A landslide is described in the Commonwealth of Pennsylvania 2010 Standard All-Hazard Mitigation Plan (PA HMP) as the downward and outward movement of slope-forming soil, rock, and vegetation reacting to the force of gravity. Materials can move up to 120 miles per hour (mph) or more; slides can last a few seconds or a few minutes, or can be gradual, slower movements over several hours or days. There are several different types of landslides, including:

- *Rock Falls* are when a mass detaches from a steep slope or cliff and descends by free fall, bounding, or rolling.
- *Rock Topples* are when a mass tilts or rotates forward as a unit.
- *Slides* are when a mass displaces on one or more recognizable surfaces, which may be curved or planar.
- *Flows* are when a mass moves downslope with a fluid motion. A significant amount of water may or may not be part of the mass (PEMA 2010).

Landslides may be triggered by both natural and human-caused changes in the environment, including heavy rain, rapid snow melt, steepening of slopes through construction or erosion, earthquakes, and changes in groundwater levels. Areas that are generally prone to landslide hazards include previous landslide areas, the bases of steep slopes, the bases of drainage channels, developed hillsides, and areas recently burned by forest and brush fires (Delano and Wilshusen 2001). Human activities that contribute to slope failure include altering the natural slope gradient, increasing soil water content, and removing vegetation cover.

#### 4.3.8.1 Location and Extent

According to the PA HMP, landslides have occurred in many parts of Pennsylvania but are most abundant and troublesome in much of the western and north-central portions of the state and adjacent states. Rockfalls and other slope failures can occur in areas of Westmoreland County with moderate to steep slopes. Areas experiencing erosion, decline in vegetation cover, and earthquakes are also susceptible to landslides. Figure 4.3.8-1 shows areas of low, moderate, and high landslide susceptibility as identified by the USGS.

**Figure 4.3.8-1. U.S Geological Survey. Landslide Incidence and Susceptibility**

Source: PEMA 2013

Note: Highlight added.

The Web Soil Survey (WSS), operated by the USDA Natural Resources Conservation Service (NRCS), provides soil data and information produced by the National Cooperative Soil Survey. The NRCS has soil maps and data available online (<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>) for more than 95% of the nation's counties including Westmoreland County.

The Westmoreland County Geographic Information Systems (GIS) Department developed the following map for landslide incidence and risk in the United States: [http://esrimedia.maps.arcgis.com/apps/StorytellingTextLegend/index.html?appid=c7c283e4a8d343f6a401fadeaa820560&WT.mc\\_id=EmailCampaignh25456](http://esrimedia.maps.arcgis.com/apps/StorytellingTextLegend/index.html?appid=c7c283e4a8d343f6a401fadeaa820560&WT.mc_id=EmailCampaignh25456).

#### 4.3.8.2 Range of Magnitude

Landslides damage transportation routes, utilities, and buildings. They can also create travel delays and other side effects. Fortunately, deaths and injuries caused by landslides are rare in Pennsylvania, and most landslides in the State are moderate to slow moving, damaging things rather than people. Almost all of the known deaths caused by landslides have occurred when rockfalls or other slides along highways have involved vehicles. Storm-induced debris flows are the only other type of landslide likely to cause death and injuries. As residential and recreational development increases on and near steep mountain slopes, the hazards from these events will also increase.

The worst-case scenario for a landslide in Westmoreland County would be an event similar to one in Beaver County in 1942 (PEMA 2010). In that event, 150 cubic yards of rock fell from a highway cut onto a bus. Twenty-two people were killed and four others were injured.

#### 4.3.8.3 Past Occurrence

Outside of impacts to important transportation routes, the history of landslides is not documented as completely (if at all) as other hazards, primarily because landslides are not always seen, and therefore historical landslide occurrences in Westmoreland County are not well known. Neither the National Climatic Data Center nor the Spatial Hazard Events and Losses Database for the United States (SHELDUS) at the University of South Carolina have any records of landslides in the county (NOAA-NCDC 2013; SHELDUS 2013). Areas in the county that have experienced landslides are North Huntingdon Township, Bell Township, Rostraver Township, Murrysville, South Huntingdon Township, and Monessen. No deaths, serious injury, or property damages have resulted.

Pennsylvania has no history of federally declared disasters as a result of landslides. One federally declared disaster included mudslides, in 2006. Westmoreland County was not included in that declaration.

#### 4.3.8.4 Future Occurrence

Mismanaged, intense development in steeply sloped areas could increase the frequency of landslides in Westmoreland County. Building and road construction are contributing development factors to landslides, as they can often undermine or steepen otherwise stable soil.

Any events that do occur would take place in steeply sloped areas that do not feature extensive land development or many structures. Increased deforestation and soil disturbances caused by development on sloped areas further increases these risks. As timbering and development of sloped land continue, the risk of significant landslides increases.

Based on available historical data, the future occurrence of landslides can be considered *unlikely* as defined by the Risk Factor Methodology probability criteria (refer to Section 4.4).

#### 4.3.8.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the identified hazard area. The following section discusses the potential impact of the landslide hazard on Westmoreland County, including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on (1) life, health and safety, (2) general building stock, (3) critical facilities, (4) economy, and (5) future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist understanding this hazard over time.

##### 4.3.8.5.1 Overview of Vulnerability

Vulnerability to ground failure hazards is a function of location, soil type, geology, type of human activity, use, and frequency of events. The effects of landslides on people and structures can be reduced by total avoidance of hazard areas or by restricting, prohibiting, or imposing conditions on hazard-zone

activity. Local governments can reduce the effects of landslides through land use policies and regulations. Individuals can reduce their exposure to hazards by educating themselves on past hazard history of the site and by making inquiries to planning and engineering departments of local governments (National Atlas 2007).

Overall, the entire County is vulnerable to this hazard. Roughly half the County is located in the high susceptibility/moderate incidence hazard area, while the remaining portion of the County is located in the high landslide incidence hazard areas. Further information regarding these hazard areas is described below.

#### 4.3.8.5.2 Data and Methodology

Unlike the flood, wind, and earthquake hazards, there are no standard loss estimation models or methodologies for the landslide hazard. In an attempt to estimate Westmoreland County's vulnerability, the Geology - Landslide Incidence and Susceptibility geographic information system (GIS) layer from National Atlas was used to coarsely define the general landslide susceptible area ("approximate hazard area") (Figure 4.3.8-1). The limitations of this analysis are recognized and are used only to provide a general estimate. Over time, additional data will be collected to allow better analysis for this hazard. Available information and a preliminary assessment are provided below.

According to Radbruch-Hall and others, the Landslide Incidence and Susceptibility GIS layer from National Atlas:

"...was prepared by evaluating formations or groups of formations shown on the geologic map of the United States (King and Beikman, 1974) and classifying them as having high, medium, or low landslide incidence (number of landslides) and being of high, medium, or low susceptibility to landsliding. Thus, those map units or parts of units with more than 15 percent of their area involved in landsliding were classified as having high incidence; those with 1.5 to 15 percent of their area involved in landsliding, as having medium incidence; and those with less than 1.5 percent of their area involved, as having low incidence. This classification scheme was modified where particular lithofacies are known to have variable landslide incidence or susceptibility. In continental glaciated areas, additional data were used to identify surficial deposits that are susceptible to slope movement. Susceptibility to landsliding was defined as the probable degree of response of the areal rocks and soils to natural or artificial cutting or loading of slopes or to anomalously high precipitation. High, medium, and low susceptibility are delimited by the same percentages used in classifying the incidence of landsliding. For example, it was estimated that a rock or soil unit characterized by high landslide susceptibility would respond to widespread artificial cutting by some movement in 15 percent or more of the affected area. We did not evaluate the effect of earthquakes on slope stability, although many catastrophic landslides have been generated by ground shaking during earthquakes. Areas susceptible to ground failure under static conditions would probably also be susceptible to failure during earthquakes" (Radbruch-Hall 1982).

#### 4.3.8.5.3 Impact on Life, Health and Safety

The approximate hazard area boundaries were overlaid on the 2010 Census population data to estimate the population located within the landslide hazard areas (U.S. Census 2010). The census blocks with their center (centroid) within the boundary of the high susceptibility/moderate incidence landslide hazard area were used to calculate the estimated population considered exposed to this hazard. Table 4.3.8-1 summarizes the general population exposed to this hazard by municipality (U.S. Census 2010).

**Table 4.3.8-1.** Population Located in the High Susceptibility/Moderate Incidence**Landslide Hazard Area**

Municipality	U.S. Census 2010 Total Population	Population Exposed			
		High Susceptibility/ Moderate Incidence	Percent of Total	Low Susceptibility	Percent of Total
Adamsburg Borough	172	0	0	172	100
Allegheny Township	8,164	0	0	8,164	100
Arnold	5,157	0	0	5,157	100
Arona Borough	370	0	0	370	100
Avonmore Borough	1,011	0	0	1,011	100
Bell Township	2,348	0	0	2,348	100
Bolivar Borough	465	465	100	0	0
Cook Township	2,250	2,250	100	0	0
Delmont Borough	2,686	0	0	2,686	100
Derry Borough	2,688	2,688	100	0	0
Derry Township	14,502	14,502	100	0	0
Donegal Borough	120	120	100	0	0
Donegal Township	2,403	2,403	100	0	0
East Huntingdon Township	7,963	7,956	99.9	7	0.1
East Vandergrift Borough	674	0	0	674	100
Export Borough	917	0	0	917	100
Fairfield Township	2,424	2,424	100	0	0
Greensburg	14,892	14,892	100	0	0
Hempfield Township	43,241	31,469	72.8	11,772	27.2
Hunker Borough	291	283	97.3	8	2.7
Hyde Park Borough	500	0	0	500	100
Irwin Borough	3,973	0	0	3,973	100
Jeannette	9,654	0	0	9,654	100
Latrobe	8,338	8,338	100	0	0
Laurel Mountain Borough	167	167	100	0	0
Ligonier Borough	1,573	1,573	100	0	0
Ligonier Township	6,603	6,603	100	0	0
Lower Burrell	11,761	0	0	11,761	100
Loyalhanna Township	2,382	1,476	62.0	906	38.0
Madison Borough	397	0	0	397	100
Manor Borough	3,239	0	0	3,239	100
Monessen	7,720	0	0	7,720	100
Mount Pleasant Borough	4,454	4,454	100	0	0
Mount Pleasant Township	10,911	10,911	100	0	0
Murrysville	20,079	0	0	20,079	100
New Alexandria Borough	560	560	100	0	0
New Florence Borough	689	689	100	0	0
New Kensington	13,116	0	0	13,116	100
New Stanton Borough	2,173	1,759	80.9	414	19.1
North Belle Vernon Borough	1,971	0	0	1,971	100
North Huntingdon Township	30,609	0	0	30,601	100
North Irwin Borough	846	0	0	846	100



Municipality	U.S. Census 2010 Total Population	Population Exposed			
		High Susceptibility/ Moderate Incidence	Percent of Total	Low Susceptibility	Percent of Total
Oklahoma Borough	809	0	0	809	100
Penn Borough	475	0	0	475	100
Penn Township	20,005	2	0	20,011	100
Rostraver Township	11,363	0	0	11,363	100
Salem Township	6,623	2,913	44.0	3,710	56.0
Scottdale Borough	4,384	4,384	100	0	0
Seward Borough	495	495	100	0	0
Sewickley Township	5,996	0	0	5,996	100
Smithton Borough	399	0	0	399	100
South Greensburg Borough	2,117	2,117	100	0	0
South Huntingdon Township	5,796	456	7.9	5,340	92.1
Southwest Greensburg Borough	2,155	2,155	100	0	0
St. Clair Township	1,518	1,518	100	0	0
Sutersville Borough	605	0	0	605	100
Trafford Borough	3,113	0	0	3,113	100
Unity Township	22,607	22,607	100	0	0
Upper Burrell Township	2,326	0	0	2,326	100
Vandergrift Borough	5,205	0	0	5,205	100
Washington Township	7,422	0	0	7,422	100
West Leechburg Borough	1,294	0	0	1,294	100
West Newton Borough	2,633	0	0	2,633	100
Youngstown Borough	326	326	100	0	0
Youngwood Borough	3,050	3,050	100	0	0
<b>Westmoreland County Total</b>	<b>365,169</b>	<b>156,005</b>	<b>42.7</b>	<b>209,164</b>	<b>57.3</b>

Source: U.S. Census 2010; Godt, 2011 (Geology WMS Layer from the National Atlas of the United States)

#### 4.3.8.5.4 Impact on General Building Stock

In general, the built environment located in the high susceptibility zones and the population, structures, and infrastructure located downslope are vulnerable to this hazard. In an attempt to estimate the general building stock vulnerable to this hazard, the associated building replacement values (buildings and contents) were calculate for the identified Census blocks within the approximate hazard area. Table 4.3.8-2 lists the replacement value (structure and contents) of general building stock exposed to this hazard.



**Table 4.3.8-2. General Building Stock Located in the High Susceptibility/Moderate Incidence and High Landslide Incidence Hazard Areas**

Municipality	Total GBS	GBS Exposed (Structure and Contents)			
		High Susceptibility/ Moderate Incidence	Percent of Total	High Incidence	Percent of Total
Adamsburg Borough	\$25,285,000	\$0	0	\$25,285,000	100
Allegheny Township	\$860,144,000	\$0	0	\$860,144,000	100
Arnold	\$682,035,000	\$0	0	\$682,035,000	100
Arona Borough	\$34,487,000	\$0	0	\$34,487,000	100
Avonmore Borough	\$194,040,000	\$0	0	\$194,040,000	100
Bell Township	\$223,407,000	\$0	0	\$223,407,000	100
Bolivar Borough	\$42,361,000	\$42,361,000	100	\$0	0
Cook Township	\$216,107,000	\$216,107,000	100	\$0	0
Delmont Borough	\$356,649,000	\$0	0	\$356,649,000	100
Derry Borough	\$249,190,000	\$249,190,000	100	\$0	0
Derry Township	\$1,351,636,000	\$1,351,636,000	100	\$0	0
Donegal Borough	\$15,051,000	\$15,051,000	100	\$0	0
Donegal Township	\$268,860,000	\$268,860,000	100	\$0	0
East Huntingdon Township	\$789,027,000	\$788,178,000	99.9	\$849,000	0.1
East Vandergrift Borough	\$66,892,000	\$0	0	\$66,892,000	100
Export Borough	\$151,365,000	\$0	0	\$151,365,000	100
Fairfield Township	\$200,613,000	\$200,613,000	100	\$0	0
Greensburg	\$2,648,084,000	\$2,648,084,000	100	\$0	0
Hempfield Township	\$4,444,319,000	\$3,318,457,000	74.7	\$1,125,862,000	25.3
Hunker Borough	\$32,319,000	\$27,487,000	85.0	\$4,832,000	15.0
Hyde Park Borough	\$138,823,000	\$0	0	\$138,823,000	100
Irwin Borough	\$575,893,000	\$0	0	\$575,893,000	100
Jeannette	\$1,345,868,000	\$0	0	\$1,345,868,000	100
Latrobe	\$1,405,181,000	\$1,405,181,000	100	\$0	0
Laurel Mountain Borough	\$37,097,000	\$37,097,000	100	\$0	0
Ligonier Borough	\$294,943,000	\$294,943,000	100	\$0	0
Ligonier Township	\$1,186,877,000	\$1,186,877,000	100	\$0	0
Lower Burrell	\$1,494,023,000	\$0	0	\$1,494,023,000	100
Loyalhanna Township	\$169,516,000	\$108,905,000	64.2	\$60,611,000	35.8
Madison Borough	\$75,888,000	\$0	0	\$75,888,000	100
Manor Borough	\$302,731,000	\$0	0	\$302,731,000	100
Monessen	\$921,147,000	\$0	0	\$921,147,000	100
Mount Pleasant Borough	\$1,048,779,000	\$1,048,779,000	100	\$0	0
Mount Pleasant Township	\$1,336,531,000	\$1,336,531,000	100	\$0	0
Murrysville	\$2,745,052,000	\$0	0	\$2,745,052,000	100
New Alexandria Borough	\$103,270,000	\$103,270,000	100	\$0	0

## SECTION 4.3.8: RISK ASSESSMENT – LANDSLIDE

Municipality	Total GBS	GBS Exposed (Structure and Contents)			
		High Susceptibility/ Moderate Incidence	Percent of Total	High Incidence	Percent of Total
New Florence Borough	\$66,297,000	\$66,297,000	100	\$0	0
New Kensington	\$2,046,442,000	\$0	0	\$2,046,442,000	100
New Stanton Borough	\$314,433,000	\$268,825,000	85.5	\$45,608,000	14.5
North Belle Vernon Borough	\$261,957,000	\$0	0	\$261,957,000	100
North Huntingdon Township	\$3,456,071,000	\$0	0	\$3,456,071,000	100
North Irwin Borough	\$62,678,000	\$0	0	\$62,678,000	100
Oklahoma Borough	\$90,674,000	\$0	0	\$90,674,000	100
Penn Borough	\$37,791,000	\$0	0	\$37,791,000	100
Penn Township	\$2,295,983,000	\$192,000	0.0	\$2,295,791,000	100.0
Rostraver Township	\$1,159,231,000	\$0	0	\$1,159,231,000	100
Salem Township	\$1,184,469,000	\$763,644,000	64.5	\$420,825,000	35.5
Scottdale Borough	\$772,590,000	\$772,590,000	100	\$0	0
Seward Borough	\$59,865,000	\$59,865,000	100	\$0	0
Sewickley Township	\$516,244,000	\$0	0	\$516,244,000	100
Smithton Borough	\$147,713,000	\$0	0	\$147,713,000	100
South Greensburg Borough	\$369,766,000	\$369,766,000	100	\$0	0
South Huntingdon Township	\$530,761,000	\$34,999,000	6.6	\$495,762,000	93.4
Southwest Greensburg Borough	\$313,935,000	\$313,935,000	100	\$0	0
St. Clair Township	\$101,946,000	\$101,946,000	100	\$0	0
Sutersville Borough	\$62,288,000	\$0	0	\$62,288,000	100
Trafford Borough	\$557,686,000	\$0	0	\$557,686,000	100
Unity Township	\$2,639,193,000	\$2,639,193,000	100	\$0	0
Upper Burrell Township	\$302,170,000	\$0	0	\$302,170,000	100
Vandergrift Borough	\$539,820,000	\$0	0	\$539,820,000	100
Washington Township	\$689,234,000	\$0	0	\$689,234,000	100
West Leechburg Borough	\$131,996,000	\$0	0	\$131,996,000	100
West Newton Borough	\$317,727,000	\$0	0	\$317,727,000	100
Youngstown Borough	\$53,155,000	\$53,155,000	100	\$0	0
Youngwood Borough	\$538,819,000	\$538,819,000	100	\$0	0
<b>Westmoreland County Total</b>	<b>\$45,654,424,000</b>	<b>\$20,630,833,000</b>	<b>45.2</b>	<b>\$25,023,591,000</b>	<b>54.8</b>

Source: Godt, 2011 (Geology WMS Layer from the National Atlas of the United States)

Note: est. = Estimated; GBS = General Building Stock;

#### 4.3.8.5.5 Impact on Critical Facilities

In general, the built environment located in the high incidence and susceptibility zones and the population, structures, and infrastructure located downslope are vulnerable to this hazard. As mentioned earlier, the entire County is vulnerable to this hazard, either being located in the high landslide incidence or in the high susceptibility/moderate incidence hazard zones. Therefore, all critical facilities located in the County are considered vulnerable.

#### 4.3.8.5.6 Impact on the Economy

Landslide's impact on the economy and estimated dollar losses are difficult to measure. As stated earlier, landslides can impose direct and indirect impacts on society. Direct costs include the actual damage sustained by buildings, property, and infrastructure. Indirect costs, such as cleanup costs, business interruption, loss of tax revenues, reduced property values, and loss of productivity, are difficult to measure. Additionally, ground failure threatens transportation corridors, fuel and energy conduits, and communication lines (USGS 2003). Estimated potential damages to general building stock can be quantified as discussed above. General building stock damages are discussed further.

Direct building losses are the estimated costs to repair or replace the damage caused to the building. The estimated replacement value of general building stock located in landslide susceptible areas, which encompasses the entire County, is greater than \$45.5 billion. Losses to the County's total building inventory replacement value would affect the local tax base and economy.

#### 4.3.8.5.7 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across Westmoreland County. Refer to Section 4.4 of this HMP. It is anticipated that new development within the identified high incidence or high susceptibility/moderate incidence landslide hazard areas will be exposed to these risks.

#### 4.3.8.5.8 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and at the local scale, climate change has the potential to alter the prevalence and severity of extremes such as severe storms, including those that may bring intense or prolonged precipitation (U.S. Environmental Protection Agency [EPA] 2006). An increase in rainfall intensity and duration will saturate the soil and potentially erode the local landscape and impair slope stability, leading to an increase of landslide events in Westmoreland County.

While predicting changes in these types of events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society and the environment (EPA 2006). The potential effects of climate change on the County's vulnerability to landslide events shall need to be considered as a greater understanding of regional climate change impacts develop.

#### 4.3.8.5.9 Additional Data and Next Steps

More detailed landslide susceptibility zones can be generated so that communities can more specifically identify high hazard areas. A pilot study was conducted for Schenectady County, New York, as described in the 2011 Draft New York State Hazard Mitigation Plan, to develop higher-resolution landslide

susceptibility zones. The methodology included using the Natural Resource Conservation Services (NRCS) Digital Soil Survey soil units and their associated properties including the American of State Highway Transportation Officials (AASHTO) rating, liquid limit, hydrologic group, percentage of silt and clay, erosion potential, and slope, derived from high-resolution digital elevation models. Obtaining historical damages to buildings and infrastructure incurred from landslides will also help with loss estimates and future modeling efforts, given a margin of uncertainty. Furthermore, research on rainfall thresholds for forecasting landslide potential may also be an option for Westmoreland County.

### 4.3.9 Lightning Strike

This section provides a profile and vulnerability assessment for the lightning strike hazard for Westmoreland County. Lightning is a rapid discharge of electrical energy in the atmosphere. When the charge difference between the ground and the cloud becomes too large, a conductive channel of air develops between the cloud and the ground, and a small amount of charge (step leader) starts moving toward the ground. When it nears the ground, an upward leader of opposite charge connects with the step leader. At the instant this connection is made, a powerful discharge occurs between the cloud and the ground and the discharge is seen as a bright flash of lightning.

#### 4.3.9.1 Location and Extent

More than 100,000 thunderstorms occur in the United States each year, with lightning striking more than 25 million points on the ground during that same period, causing numerous injuries and fatalities (National Oceanic and Atmospheric Administration [NOAA] date unknown). Lightning can occur with all thunderstorms, making all of Westmoreland County susceptible. Different geographic areas experience varying event frequencies, but in all cases lightning strikes and associated fatalities occur primarily during the summer months.

While the impact of lightning events is highly localized, strong storms can result in numerous widespread events over a broad area. According to the Commonwealth of Pennsylvania 2010 Standard All-Hazard Mitigation Plan (PA HMP), Westmoreland County ranked ninth of the 67 counties for number of lightning strikes that resulted in injury, fatality, or property or crop loss from 1950 to 2009 (PEMA 2010).

#### 4.3.9.2 Range of Magnitude

Because lightning damage is largely unreported, statistics vary considerably. The insurance industry estimates that 6.5 percent of all property/casualty claims are related to lightning strikes. While it is difficult to quantify lightning losses, it is estimated that \$4 to \$5 billion in damage occurs each year across the United States. Likewise, the cost of lightning protection to safeguard critical equipment and facilities from lightning strikes during severe weather is enormous (BCPC 2012).

Each year, lightning strikes across the United States are responsible for an average of between 55 and 60 fatalities, several hundred injuries, and billions of dollars in property damage. Many case histories show observed heart damage, inflated lungs, and brain damage in lightning-related fatalities. Many who have survived report loss of consciousness, amnesia, paralysis, and burns. Death and injury to livestock and other animals; thousands of forest and brush fires; and damage to buildings, communications systems, power lines, and electrical systems are also the result of lightning (PEMA 2013).

Between 2000 and 2010, Pennsylvania ranked tenth among all states in the United States with 13 reported fatalities caused by lightning, representing approximately 3 percent of all lightning-caused deaths in the U.S. over that period of time (NOAA date unknown; NWS 2012). Between 1959 and 1994, Pennsylvania ranked third among all states in the United States with 644 casualties (i.e. combination of deaths and injuries). This represents approximately 5 percent of casualties that occurred throughout the United States over that 35-year period (PEMA 2010).

The worst-case scenario for lightning strikes would be a strike in a large group of people, such as at an outdoor sporting event or concert (PEMA 2013). Numerous injuries or deaths could occur.

## 4.3.9.3 Past Occurrence

A lightning event is defined as a lightning strike that results in fatality, injury, and/or property or crop damage (PEMA 2010). Records from the National Climatic Data Center (NCDC) and Knowledge Center show that there were 28 reported lightning events in Westmoreland County between 1950 and 2013 (listed in Table 4.3.9-1 below), though lightning occurs multiple times during each severe storm.

**Table 4.3.9-1. Westmoreland County Recorded Lightning Events**

Date	Location	Death	Injuries	Property Damage (\$)
4/16/1993	Countywide	0	0	\$50,000
3/15/1994	City of Latrobe	0	0	-
4/19/1995	North Huntingdon Township	0	0	\$5,000
6/7/1995	City of Arnold	0	0	\$5,000
6/24/1995	Irwin Borough	0	0	\$5,000
7/15/1995	Harrison City	0	0	\$10,000
7/28/1995	Adamsburg Borough	0	0	\$5,000
8/2/1995	Hempfield Township	0	0	\$8,000
6/8/1996	City of Latrobe	0	6	-
6/11/1996	City of Greensburg	0	0	\$3,000
8/8/1996	Harrison City	0	0	\$5,000
7/18/1997	New Stanton Borough	0	0	\$20,000
7/18/1997	Derry Township	0	0	\$10,000
8/16/1997	Donegal Township	0	0	\$5,000
5/31/1998	Mount Pleasant Township	0	0	\$15,000
5/31/1998	Sewickley Township	0	1	-
6/20/2001	Fairfield Township	1	2	-
6/5/2002	Bell Township	0	5	-
8/9/2007	Countywide	0	0	UNK
7/20/2008	Unity Township	0	0	UNK
8/14/2008	City of Greensburg	0	0	-
5/8/2010	Unity Township	0	0	UNK
5/14/2010	Countywide	0	0	UNK
8/19/2011	Countywide	0	0	UNK
8/21/2011	Countywide	0	0	UNK
7/18/2012	Countywide	0	0	UNK
7/24/2012	Countywide	0	0	UNK
7/16/2013	Countywide	0	0	UNK
	<b>Total</b>	<b>1</b>	<b>14</b>	<b>\$151,000</b>

Source: NCDC 2013; Knowledge Center 2013



#### 4.3.9.4 Future Occurrence

Lightning can be expected in any severe storm event. While injuries or fatalities caused by lightning strikes are rare, lightning events severe enough to be reported can be expected at least once every 2 years. The future occurrence of lightning strikes can be considered likely as defined by the Risk Factor Methodology probability criteria (described in Section 4.4).

#### 4.3.9.5 Vulnerability Assessment

To understand risk, a community must evaluate the assets that are exposed or vulnerable in the identified hazard area. For lightning events, all of Westmoreland County has been identified as the hazard area. Therefore, all assets (population, structures, critical facilities, and lifelines), as described in Section 2, are vulnerable. This section evaluates and estimates the potential impact of lightning strike events on Westmoreland County including the following subsections:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on life, health, and safety; general building stock, critical facilities, and the economy; and future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist understanding this hazard over time

##### 4.3.9.5.1 Overview of Vulnerability

Evaluation of NCDC and Knowledge Center lightning data for Westmoreland County, along with data from the current and previous versions of the PA HMP, show that while the absolute number of lightning events has changed for individual municipalities, the basic pattern of vulnerability across the County has remained relatively consistent.

The potential for lightning strikes will continue to exist for all municipalities in the County. The direct and indirect losses associated with these events include injury and loss of life, damage to structures and infrastructure, agricultural losses, utility failure (power outages), and stress on community resources.

Westmoreland County is a StormReady county. This designation is obtained through participation in the NWS StormReady Program, which includes the following six guidelines met by the County:

- Communication – A 24-hour warning point (WP) must be fully staffed at all times, and a County Emergency Operations Center (EOC) must be established.
- NWS Information Reception – At least four redundant systems must be in place at the WP to receive weather warnings.
- Hydrometeorological Monitoring – At least four methods of monitoring hydrometeorological data must be available.
- Local Warning Dissemination – At least four redundant systems must be in place to notify the County of severe weather warnings, and there must be National Weather Radio-Specific Area Messaging Encoding receivers in public facilities.

- Community Preparedness – The County must present at least four annual weather safety talks, spotters and dispatchers must be trained biennially, and the County must host or co-host NWS spotter training annually.
- Administration – The County must also meet a number of administrative criteria that include formal hazardous weather operations planning, biennial visits of the County Emergency Management Coordinator (EMC) to the NWS office, and annual visits by an NWS official to the County.

Meeting the criteria of the StormReady program results in a decrease in vulnerability to all severe weather events, including lightning strikes.

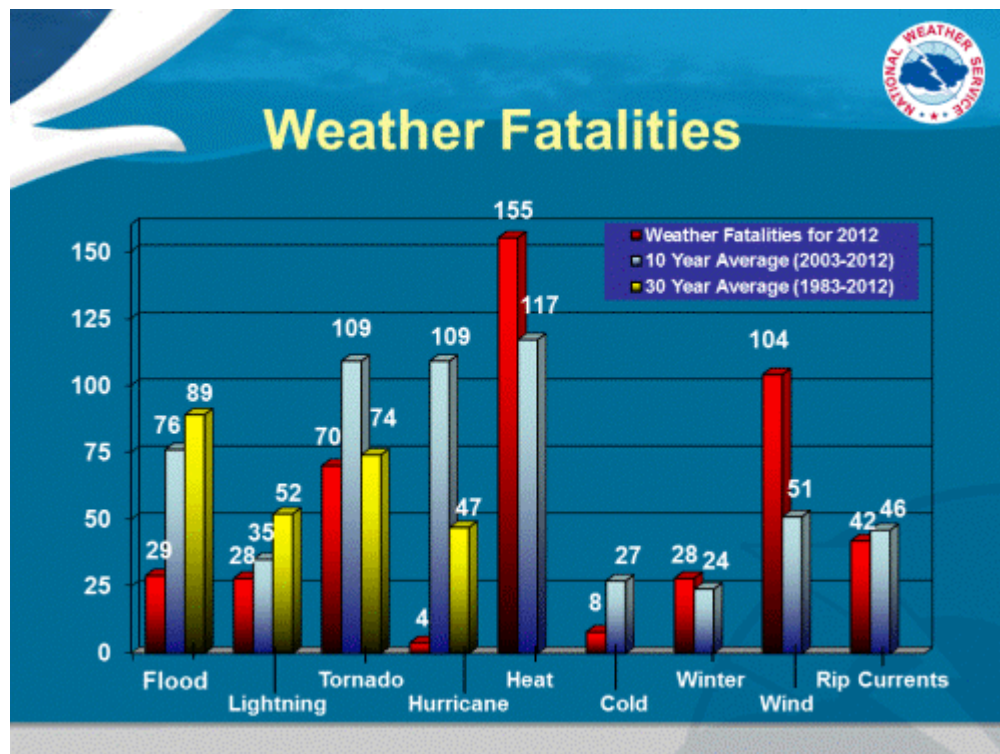
#### 4.3.9.5.2 Data and Methodology

National weather databases and local resources were used to collect and analyze lightning impacts on Westmoreland County.

#### 4.3.9.5.3 Impact on Life, Health, and Safety

Across the United States, the 10-year average (2003 to 2012) for fatalities caused by lightning is 35, while the 30-year average (1983 to 2012) is 52 (NOAA 2014). Figure 4.3.9-1 illustrates these statistics. According to NOAA, one fatality and 14 injuries have resulted from lightning events from 1950 to 2013 in Westmoreland County (NCDC 2013).

*Figure 4.3.9-1. Weather Fatalities in the United States*



Source: NOAA 2014

The entire population of the County is considered exposed to the lightning hazard. Lightning strikes in Pennsylvania occur primarily during the summer months. In general, population and building density have a correlation with hazard vulnerability and loss. The urban areas of Westmoreland County are at greater lightning risk than others because of its higher population density. Populations located outdoors are considered at risk and more vulnerable to a lightning strike compared to those inside a shelter. Moving to a lower-risk location will decrease a person's vulnerability.

#### 4.3.9.5.4 Impact on General Building Stock, Critical Facilities, and the Economy

For the purposes of this Plan, the entire general building stock and all infrastructure of Westmoreland County are considered exposed to the lightning strike hazard. In general, urban and suburban areas in the County are at greater lightning risk than more rural areas due to higher population and structure density. Taller buildings can act as lightning rods; therefore, they naturally have experienced greater vulnerability and loss during past lightning strike events (PEMA 2013).

The precise vulnerability of lightning strikes will depend on a facility's height in relation to surrounding buildings, as well as the absence or presence of a lightning rod or other lightning channeling technology on the structure. According to the PA HMP, fire departments, schools, and police departments are the most vulnerable to lightning strikes. Food and agriculture facilities that raise livestock may also be more vulnerable to lightning strikes as these animals tend to shelter under trees in storm situations. It is important to note that most of the food and agriculture-related critical facilities are privately owned farms that may own sizeable herds of livestock; however, the Commonwealth critical facilities list does not indicate which of the farms own herds. Finally, if entertainment and recreation facilities include outdoor recreation spaces with wide-open spaces, there may be added lightning strike vulnerability (PEMA 2013).

According to NOAA's Technical Paper titled "Lightning Fatalities, Injuries, and Damage Reports in the United States from 1959 - 1994," monetary losses for lightning events range from less than \$50 to greater than \$5 million (larger losses associated with forest fires with homes destroyed and crop loss) (NOAA 1997). Lightning can be responsible for damages to buildings; cause electrical, forest, and/or wildfires; and damage infrastructure such as power transmission lines and communication towers. Agricultural losses caused by lightning and lightning-resulting fires can be devastating.

The PA HMP estimated jurisdictional losses for the 21 counties most threatened by lightning strike, including Westmoreland County. Using Geographic Information Systems (GIS), losses for the County were estimated to total over \$4.9 million. Note that losses due to lightning strikes will differ based on the magnitude of the event and the lightning protection measures on a given facility (PEMA 2013).

#### 4.3.9.5.5 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across the County at the municipal level, as described in Section 4.4. New development is anticipated to be exposed to the lightning strike hazard.

#### 4.3.9.5.6 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and the local level, climate change has the potential to alter the prevalence and severity of weather extremes such as storms, including those that may bring lightning. While predicting changes of lightning events under a changing climate is difficult, understanding

vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society and the environment (U.S. Environmental Protection Agency [EPA] 2006).

Since the 1970s, globally there has been an increase in tropical cyclone destructiveness. The increased tropical cyclone intensity and duration correlates with sea surface temperature. This suggests that future increases of tropical sea surface temperature may lead to future increases in tropical cyclone intensity and duration. However, there is a high level of uncertainty regarding the relationship between climate change and storm events. Future improvements in modeling smaller-scale climatic processes can be expected and will lead to improved understanding of the ways in which the changing climate will alter temperature, precipitation, and storms events in Pennsylvania (Shortle et al. 2009).

#### 4.3.9.5.7 Additional Data and Next Steps

The assessment above identifies vulnerable populations and potential structural and economic losses associated with the lightning strike hazard. Research performed at NOAA and other private organizations is ongoing to improve warning and threat information for the public. The continued collection of additional/actual loss data specific to the Plan participants will further enhance Westmoreland County's vulnerability assessment.

### 4.3.10 Radon Exposure

Radon is a natural gas that one cannot see, smell, or taste. It is a noble gas that originates by the natural radioactive decay of uranium and thorium. It is a large component of the natural radiation that humans are exposed to and can pose a serious threat to public health when it accumulates in poorly ventilated residential and occupation settings. According to the U.S. Environmental Protection Agency (EPA), radon is estimated to cause approximately 21,000 lung cancer deaths per year, second only to smoking as the leading cause of lung cancer (EPA 402-R-03-003: EPA Assessment 2003). An estimated 40 percent of the homes in Pennsylvania are believed to have elevated radon levels (Pennsylvania Department of Environmental Protection [PA DEP] 2009). This section provides a profile and vulnerability assessment for the radon exposure hazard.

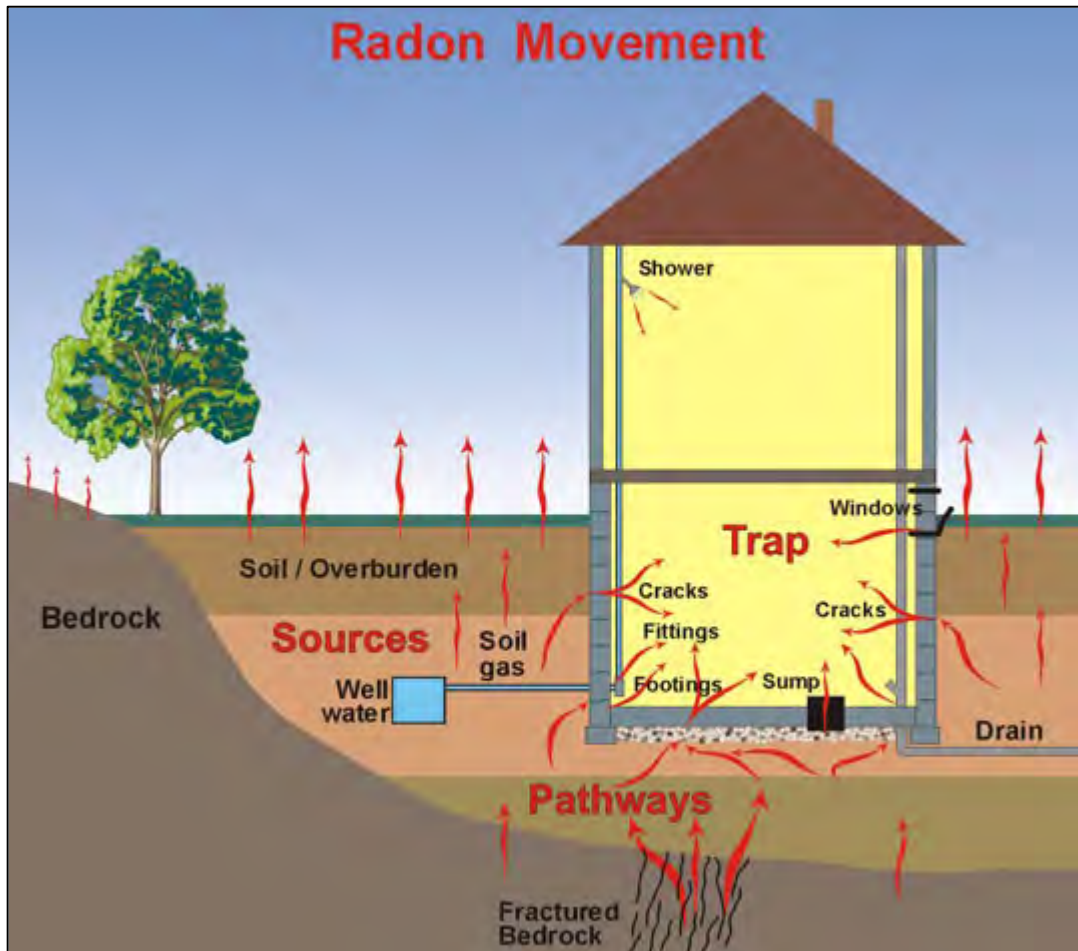
#### 4.3.10.1 Location and Extent

Radioactivity caused by airborne radon has been recognized for many years as an important component in the natural background radioactivity exposure of humans. It was not until the 1980s that the wide geographic distribution of elevated values in houses and the possibility of extremely high radon values in houses were recognized. In 1984, routine monitoring of employees leaving the Limerick nuclear power plant near Reading, Pennsylvania, showed that readings on one employee frequently exceeded expected radiation levels, yet only natural, nonfission-product radioactivity was detected on him. Radon levels in his home were detected around 2,500 picoCuries per Liter (pCi/L), much higher than the 4 pCi/L guideline set by the EPA or even the 67 pCi/L limit for uranium miners. As a result of this event, the Reading Prong section of Pennsylvania where Watras lived became the focus of the first large-scale radon scare in the world.

However, radon ( $^{222}\text{Rn}$ ), which has a half-life of 3.8 days, is a widespread hazard. The distribution of radon is correlated with the distribution of radium ( $^{226}\text{Ra}$ ), its immediate radioactive parent, and with uranium, its original ancestor. Because of the short half-life of radon, the distance radon atoms can travel from their parent before they decay is generally limited to distances of feet or tens of feet. Three sources of radon in houses are now recognized:

- Radon in soil air that flows into the house;
- Radon dissolved in water from private wells and exsolved during water usage; this source is rarely a problem in Pennsylvania; and
- Radon emanating from uranium-rich building materials (such as concrete blocks or gypsum wallboard); this source also is not known to be a problem in Pennsylvania (PEMA 2010).

Figure 4.3.10-1 illustrates radon entry points into a home.

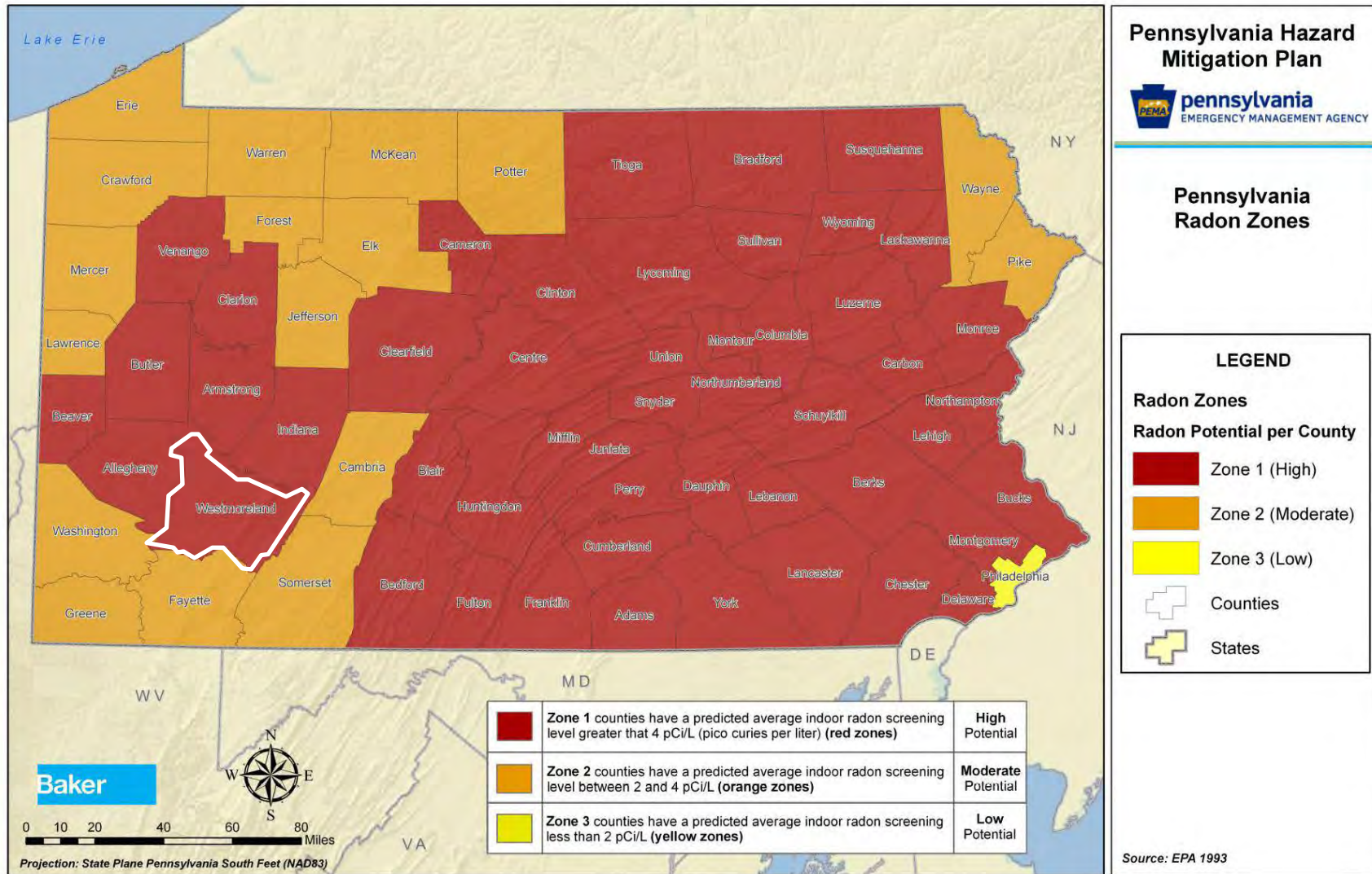
*Figure 4.3.10-1: Sketch of Radon Entry Points into a House*

Source: PEMA 2010, Arizona Geological Survey 2006

Each county in Pennsylvania is classified as having a low, moderate, or high radon hazard potential. A majority of counties across the commonwealth, particularly counties in eastern Pennsylvania, have a high hazard potential. Western Pennsylvania counties, however, are not completely immune from the threat of radon, as nine western counties experience a high potential for radon exposure. The average indoor radon screening level for high exposure counties is greater than 4 pCi/L. Westmoreland County is in Zone 1 – High Radon Potential, as noted in Figure 4.3.10-2 below.



**Figure 4.3.10-2: Radon Hazard Zones in Pennsylvania**



Source: PEMA 2013, EPA 1993 (white highlight added)



High radon levels were initially thought to be exacerbated in houses that are tightly sealed, but it is now recognized that rates of air flow into and out of houses, plus the location of air inflow and the radon content of air in the surrounding soil, are key factors in radon concentrations. Outflows of air from a house, caused by a furnace, fan, thermal “chimney” effect, or wind effects, require that air be drawn into the house to compensate. If the upper part of the house is tight enough to impede influx of outdoor air (radon concentration generally below 0.1 pCi/L), then an appreciable fraction of the air may be drawn in from the soil or fractured bedrock through the foundation and slab beneath the house, or through cracks and openings for pipes, sumps, and similar features. Soil gas typically contains from a few hundred to a few thousand pCi/L of radon; therefore, even a small rate of soil gas inflow can lead to elevated radon concentrations in a house.

The radon concentration of soil gas depends on a number of soil properties, the importance of which are still being evaluated. In general, 10 to 50 percent of newly formed radon atoms escape the host mineral of their parent radium and gain access to the air-filled pore space. The radon content of soil gas clearly tends to be higher in soils containing higher levels of radium and uranium, especially if the radium occupies a site on or near the surface of a grain from which the radon can easily escape. The amount of pore space in the soil and its permeability for air flow, including cracks and channels, are important factors determining radon concentration in soil gas and its rate of flow into a house. Soil depth and moisture content, mineral host and form for radium, and other soil properties may also be important. Fractured zones may supply air having radon concentrations similar to those in deep soil for houses built on bedrock.

Areas where houses have high levels of radon can be divided into three groups in terms of uranium content in rock and soil:

- Areas of very elevated uranium content (above 50 parts per million [ppm]) around uranium deposits and prospects: Although very high levels of radon can occur in these areas, the hazard normally is restricted to within a few hundred feet of the deposit. In Pennsylvania, these localities occupy an insignificant area.
- Areas of common rocks having higher than average uranium content (5 to 50 ppm): In Pennsylvania, these rock types include granitic and felsic alkali igneous rocks and black shales. High uranium values in rock or soil and high radon levels in houses in the Reading Prong are associated with Precambrian granitic gneisses commonly containing 10 to 20 ppm uranium, but locally containing more than 500 ppm uranium. Elevated uranium occurs in black shales of the Devonian Marcellus Formation and possibly the Ordovician Martinsburg Formation in Pennsylvania. High radon values are locally present in areas underlain by these formations.
- Areas of soil or bedrock that have normal uranium content but properties that promote high radon levels in houses: This group is incompletely understood at present. Relatively high soil permeability can lead to high radon, the clearest example being houses built on glacial eskers. Limestone-dolomite soils also appear to be predisposed for high radon levels in houses, perhaps because of the deep clay-rich residuum where radium is concentrated by weathering on iron oxide or clay surfaces, coupled with moderate porosity and permeability. The importance of carbonate soils is indicated by the fact that radon contents in 93 percent of a sample of houses built on limestone-dolomite soils near State College, Centre County, exceeded 4 pCi/L, and 21 percent exceeded 20 pCi/L, even though the uranium values in the underlying bedrock are all in the normal range of 0.5 to 5 ppm uranium (PEMA 2010).

According to the state plan, radon tends to exist as a gas or as a dissolved atomic component in groundwater. The most problematic source of radon in houses in Pennsylvania is radon in soil gas that



flows into the house. Even a small rate of soil gas inflow can lead to elevated radon concentrations in a house. The state plan indicates that current data on the abundance and distribution of radon in Pennsylvania homes is incomplete and biased, but the plan identifies general patterns (PEMA 2010).

#### 4.3.10.2 Range of Magnitude

Exposure to radon is the second leading cause of lung cancer after smoking. It is the number one cause of lung cancer among non-smokers. As stated earlier, radon is responsible for about 21,000 lung cancer deaths every year, approximately 2,900 of which occur among people who have never smoked. Lung cancer is the only known effect on human health from exposure to radon in air and, thus far, there is no evidence that children are at greater risk of lung cancer than are adults (EPA 2010). The main hazard is actually from the radon daughter products (Polonium-218, Lead-214, Bismuth-214), which may become attached to lung tissue and induce lung cancer by their radioactive decay. Table 4.3.10-1 shows the relationship between various radon levels, probability of lung cancer, comparable risks from other hazards, and action thresholds.

*Table 4.3.10-1. Radon Risk for Smokers and Non-Smokers*

RADON LEVEL (pCi/L)	IF 1,000 PEOPLE WERE EXPOSED TO THIS LEVEL OVER A LIFETIME... *	RISK OF CANCER FROM RADON EXPOSURE COMPARES TO... **	ACTION THRESHOLD
<b>SMOKERS</b>			
20	About 260 people could get lung cancer	250 times the risk of drowning	Fix structure
10	About 150 people could get lung cancer	200 times the risk of dying in a home fire	Fix structure
8	About 120 people could get lung cancer	30 times the risk of dying in a fall	Fix structure
4	About 62 people could get lung cancer	5 times the risk of dying in a car crash	Fix structure
2	About 32 people could get lung cancer	6 times the risk of dying from poison	Consider fixing between 2 and 4 pCi/L
1.3	About 20 people could get lung cancer	(Average indoor radon level)	Reducing radon levels below 2 pCi/L is difficult
0.4	About 3 people could get lung cancer	(Average outdoor radon level)	
<b>NON-SMOKERS</b>			
20	About 36 people could get lung cancer	35 times the risk of drowning	Fix structure
10	About 18 people could get lung cancer	20 times the risk of dying in a home fire	Fix structure
8	About 15 people could get lung cancer	4 times the risk of dying in a fall	Fix structure
4	About 7 people could get lung cancer	The risk of dying in a car crash	Fix structure
2	About 4 people could get lung cancer	The risk of dying from poison	Consider fixing between 2 and 4 pCi/L
1.3	About 2 people could get lung cancer	(Average indoor radon level)	Reducing radon levels below 2 pCi/L is difficult
0.4		(Average outdoor radon level)	
NOTE: Risk may be lower for former smokers.			
* Lifetime risk of lung cancer deaths from EPA Assessment of Risks from Radon in Homes (EPA 402-R-03-003).			
** Comparison data calculated using the Centers for Disease Control and Prevention's 1999-2001 National Center for Injury Prevention and Control Reports.			

Source: EPA, 2010

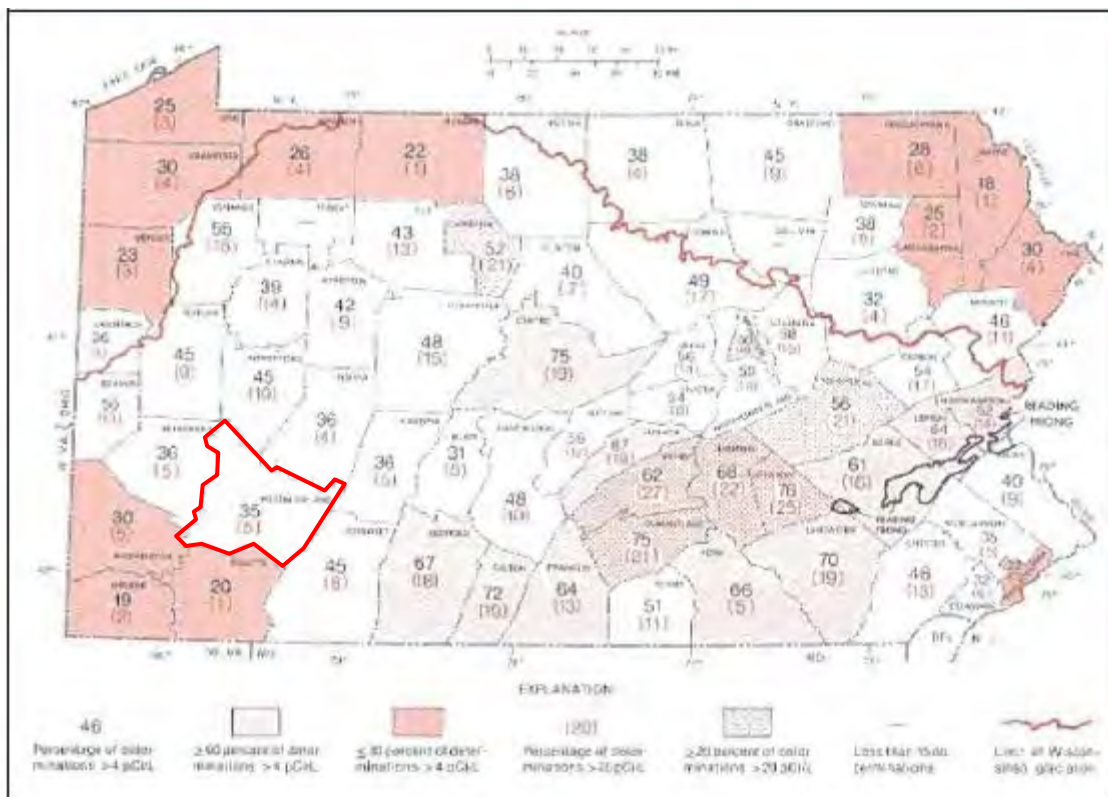
According to the EPA, the average radon concentration in the indoor air of U.S. homes is about 1.3 pCi/L. The EPA recommends homes be fixed if the radon level is 4 pCi/L or more. However, the EPA also recommends that Americans consider fixing their home for radon levels between 2 pCi/L and 4 pCi/L because there is no known safe level of exposure to radon. As shown in Table 4.3.10-1, a smoker exposed to radon has a much higher risk of lung cancer.

The worst-case scenario for radon exposure would be that a large area of tightly sealed homes created high levels of exposure for residents over a prolonged period of time without the resident being aware. This worst-case scenario exposure then could lead to a large number of people with cancer attributed to the radon exposure (PEMA 2010).

#### 4.3.10.3 Past Occurrence

Current data on abundance and distribution of radon in Pennsylvania houses are considered incomplete and potentially biased, but some general patterns exist (see Figure 4.3.10-3).

**Figure 4.3.10-3: Percentage of Pennsylvania homes having radon levels greater than 4 pCi/L**



Source: PEMA 2013 (red highlight added)

Values exceeding the EPA's guideline of 4 pCi/L occur in all regions of the commonwealth. For Westmoreland County, in particular, the average indoor radon level is 6.6 pCi/L (PRI, 2009). Information on average radon levels by zip code in Pennsylvania can be obtained from the DEP (PEMA 2013).

#### 4.3.10.4 Future Occurrence

Radon exposure is inevitable given present soil, geologic, and geomorphic factors across Pennsylvania. Residents who live in developments in areas where previous radon levels have been significantly high will continue to be more susceptible to exposure. However, new incidents of concentrated exposure may occur with future development or deterioration of older structures. Exposure can be limited with proper testing for both past and future development and appropriate mitigation measures (PEMA 2010). As part of a 2014 push, the EPA’s “Test, Fix, Save a Life” radon action campaign strives to highlight radon testing and mitigation as a simple and affordable step to significantly reduce the risk for lung cancer. Through this initiative, the “Test, Fix, Save a Life” mantra specifies activities and facts for the public regarding radon poisoning, as illustrated below:

- **Test:** All homes with or without basements should be tested for radon. Affordable do-it-yourself radon test kits are available online and at home improvement and hardware stores, or you can hire a qualified radon tester.
- **Fix:** EPA recommends taking action to fix radon levels at or above 4 pCi/L and contacting a qualified radon-reduction contractor. In most cases, a system with a vent pipe and fan is used to reduce radon. Addressing high radon levels often costs the same as other minor home repairs.
- **Save a Life:** 21,000 Americans die from radon related lung cancer each year. By fixing elevated levels in your home, you can help prevent lung cancer while creating a healthier home for you and your family (EPA 2014).

The future occurrence of radon exposure can be considered *likely* as defined by the Risk Factor Methodology probability criteria (refer to Section 4.4).

#### 4.3.10.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the identified hazard area. The following section discusses the potential impact of the radon exposure hazard on Westmoreland County, including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on (1) life, health and safety, (2) general building stock and critical facilities, (3) economy, (4) environment, and (5) future growth and development
- Further data collections that will assist understanding this hazard over time

##### 4.3.10.5.1 Overview of Vulnerability

Radon exposure is of particular concern in Westmoreland County because of its location within a High Potential (Level 1) EPA Radon Zone. While structural factors (such as building construction and engineered mitigation measures) can influence the level of radon exposure, all residents and structures within Westmoreland County are vulnerable to radon exposure.

#### 4.3.10.5.2 Data and Methodology

The 2010 U.S. Census data and the custom building inventory for Westmoreland County were used to support an evaluation of assets exposed to this hazard and the potential impacts associated with this hazard. Per the 2013 Pennsylvania State Hazard Mitigation Plan, an average radon mitigation system cost of \$1,200 was applied to 20 percent of the building stock to evaluate economic vulnerability (PEMA 2013).

#### 4.3.10.5.3 Impact on Life, Health and Safety

For the purposes of this Plan, the entire population of the county is exposed to the risk of radon exposure. Radon is responsible for approximately 21,000 lung cancer deaths every year, approximately 2,900 of which occur among people who have never smoked. Lung cancer is the only known effect on human health from exposure to radon in air and thus far, there is no evidence that children are at greater risk of lung cancer than are adults (EPA 2010).

Per Figure 4.3.10-3 (see Section 4.3.10.4), 35 percent of homes in Westmoreland County have measured radon levels exceeding 4 pCi/L. Excess human cancer risk posed by radon exposure at this elevated level is identified in Table 4.3.10-1.

#### 4.3.10.5.4 Impact on General Building Stock and Critical Facilities

While the entire general building stock and critical facility inventory in the county is exposed to radon, radon does not result in direct damage to structures and facilities. Rather, engineering methods installed to mitigate human exposure to radon in structures results in economic costs described in the following subsection.

#### 4.3.10.5.5 Impact on the Economy

The EPA concluded that an average radon mitigation system costs \$1,200. The EPA also states that current state surveys show that one home in five has elevated radon levels. Using this methodology, radon loss estimation is factored by assuming that 20 percent of the residential buildings within the High Potential (Level 1) counties have elevated radon values, and each would require a radon mitigation system installed at the EPA estimated average of \$1,200 (PEMA 2013).

According to this methodology, estimated radon mitigation costs for residential structures in Westmoreland County could exceed \$40 million. Per Figure 4.3.10-3, 35 percent of households in the county have measured basement level average radon levels exceeding 4 pCi/L. As a result, the estimated cost for radon mitigation may be higher than that estimated using EPA methodology, where only 20 percent of structures are considered for mitigation.

#### 4.3.10.5.6 Impact on the Environment

Radon exposure has minimal environmental impacts. Based on the relatively short half-life of radon, it tends to affect only living and breathing organisms such as humans or pets that are routinely in contained areas (basement or house) where the gas is released (PEMA 2013).



#### 4.3.10.5.7 Future Growth and Development

Westmoreland County in its entirety has been identified as the hazard area for the radon exposure hazard. Therefore, any new development will be exposed to this risk. Measures to reduce human exposure to radon in structures are readily available and can be incorporated during new construction at significantly lower cost and greater effectiveness as opposed to retrofitting existing structures.

#### 4.3.10.5.8 Additional Data and Next Steps

The assessment above identifies human health and economic losses associated with this hazard of concern; however, these estimates are based on national epidemiological statistics and generalized estimates of costs to mitigate structures in Westmoreland County. As specific structural conditions affect human exposure to radon, direct radon measurements within facilities are needed to properly assess the level of health risk and indicate the need for mitigation measures. Furthermore, a consideration of radon exposure risk and installation of mitigation measures as appropriate are recommended by the EPA during all new construction.

### 4.3.11 Subsidence/Sinkhole

This section provides a profile and vulnerability assessment for the subsidence/sinkhole hazard for Westmoreland County. Subsidence/sinkholes may be natural or related to underground mining activities. Though the predominant cause of subsidence/sinkholes in Westmoreland, underground mining, is not considered a geologic hazard it will be treated as such in this document. In addition, past occurrences of subsidence/sinkholes have not occurred in Westmoreland due to its underlying bedrock composition, however this does not indicate that subsidence/sinkholes will not occur in the future due to this reason. Thus information will be presented to highlight this hazard cause and its potential impacts.

According to the U.S. Geological Survey (USGS), “ground failure” is the term used to describe zones of ground cracking, fissuring, and localized horizontal and vertical permanent ground displacement that may be caused by surface rupture along faults; secondary movement on shallow faults; shaking-induced compaction of natural deposits in sedimentary basins and river valleys; liquefaction of loose, sandy sediment (USGS 2013); landslides; and land subsidence and sinkholes. For the purpose of this Hazard Mitigation Plan (HMP), the ground failure hazard to which Westmoreland County is vulnerable includes, but is not limited to, land subsidence or sinkholes, which are further defined below.

Land subsidence can be defined as the sudden sinking or gradual downward settling of the earth’s surface with little or no horizontal motion, owing to the subsurface movement of earth materials (USGS 2007). Subsidence often occurs through the loss of subsurface support due to mining or in Karst terrain, which may result from a number of natural and human-caused occurrences. Karst is a distinctive topography in which the landscape is largely shaped by the dissolving action of water on carbonate bedrock (usually limestone, dolomite, or marble).

Karst features are defined as pockets of limestone or dolomite bedrock located within more stable geological formations that could cause subsidence or sinkholes. The density of karst features ranges from 0 to 600 features per square mile with wide variations in size. Fewer karst features have been mapped in existing urban areas; however, this is likely a result of development activities that disguise, cover, or fill existing features rather than an absence of the features themselves (PEMA 2013).

Sinkholes are a natural and common geologic feature in areas with underlying limestone, carbonate rock, salt beds, or other rocks that are soluble in water. Over periods of time measured in thousands of years, the carbonate bedrock can be dissolved through acidic rainwater moving in fractures or cracks in the bedrock. This creates larger openings in the rock through which water and overlying soil materials will travel. Over time, the deposited soils compromise the strength of the bedrock, until it is unable to support the land surface above, causing a collapse or sinkhole. In this example the sinkhole occurs naturally, but in other cases the root causes of a sinkhole are anthropogenic, especially those that involve changes to the water balance of an area including over-withdrawal of groundwater, diverting surface water from a large area and concentrating it in a single point, artificially creating ponds of surface water, and drilling new water wells. These actions can also serve to accelerate the natural processes of bedrock degradation, which can have a direct impact on sinkhole creation.

Both natural and man-made sinkholes can occur without warning. Specific signs that a sinkhole is forming include slumping or falling fence posts, trees, or foundations; sudden formation of small ponds; wilting vegetation; discolored well water; and/or structural cracks in walls and floors. Sinkholes can form into steep-walled holes to bowl or cone shaped depressions. When sinkholes occur in developed areas they can cause severe property damage, injury and loss of life, disruption of utilities, and damage to roadways. In urban and suburban areas, sinkholes can destroy highways and buildings.

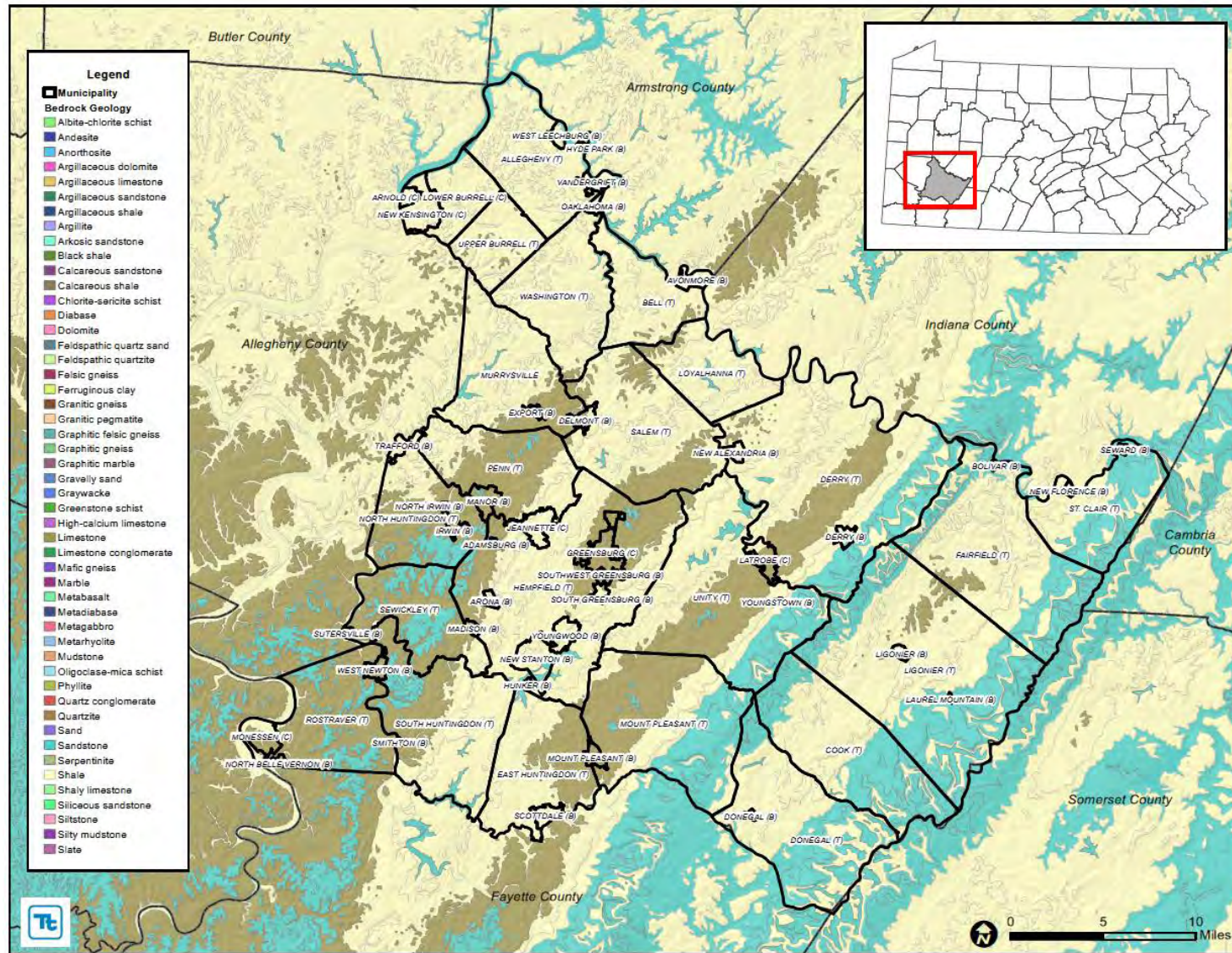
There are two common causes of subsidence in Pennsylvania: dissolution of carbonate rock such as limestone or dolomite, and mining activity. Water passing through naturally occurring fractures and bedding planes dissolves bedrock, leaving voids below the surface. Eventually, overburden on top of the voids collapses, leaving surface depressions resulting in karst topography. Characteristic features associated with karst topography include sinkholes, linear depressions, and caves. Often, subsurface solution of limestone will not result in the immediate formation of karst features. Collapse sometimes occurs only after a large amount of activity, or when a heavy burden is placed on the overlying material (PEMA 2013).

#### 4.3.11.1 Location and Extent

Approximately 21 percent of Westmoreland County (219.3 miles) is underlain by carbonate bedrock. Figure 4.3.11-1 illustrates the bedrock geology of Westmoreland County. Figure 4.3.11-2 illustrates areas of Pennsylvania subject to natural subsidence caused by the presence of limestone bedrock and Figure 4.3.11-3 more specifically illustrates the limestone bedrock across Westmoreland County.

The County's susceptibility to sinkholes and subsidence is primarily attributed to the number of abandoned mines throughout Westmoreland County. Of the 567 mines located across the County, 89 are identified as subsidence areas. Figure 4.3.11-4 shows the approximate location of abandoned mine land problem areas created by past coal mining; information is based on a subset of data contained in the Office of Surface Mining Abandoned Mine Land Inventory.

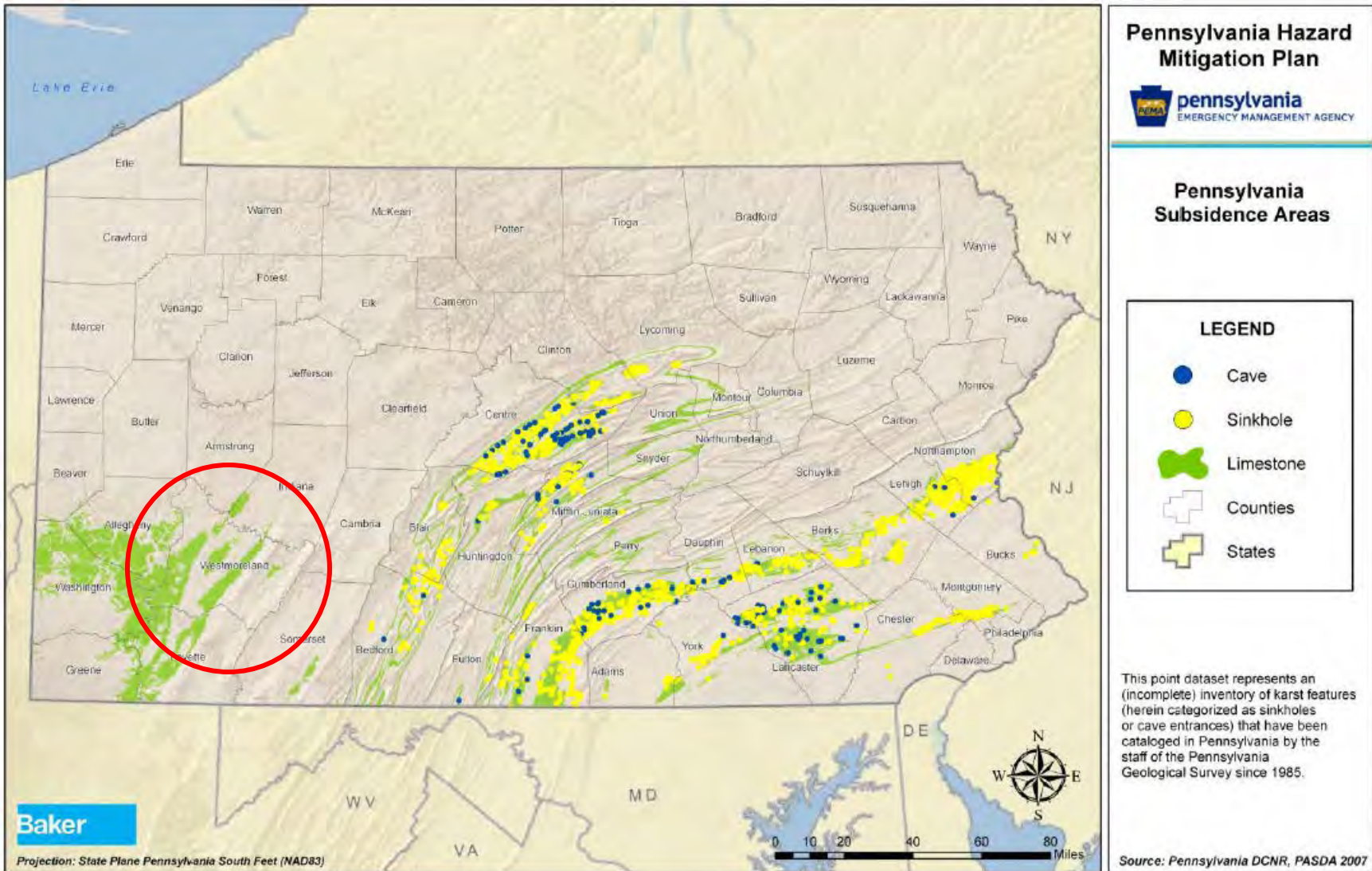
Figure 4.3.11-1. Westmoreland County Geology



Source: Pennsylvania Bureau of Topographic and Geologic Survey 2001



**Figure 4.3.11-2. Areas of Pennsylvania Subject to Natural Subsidence Due to the Presence of Limestone Bedrock**

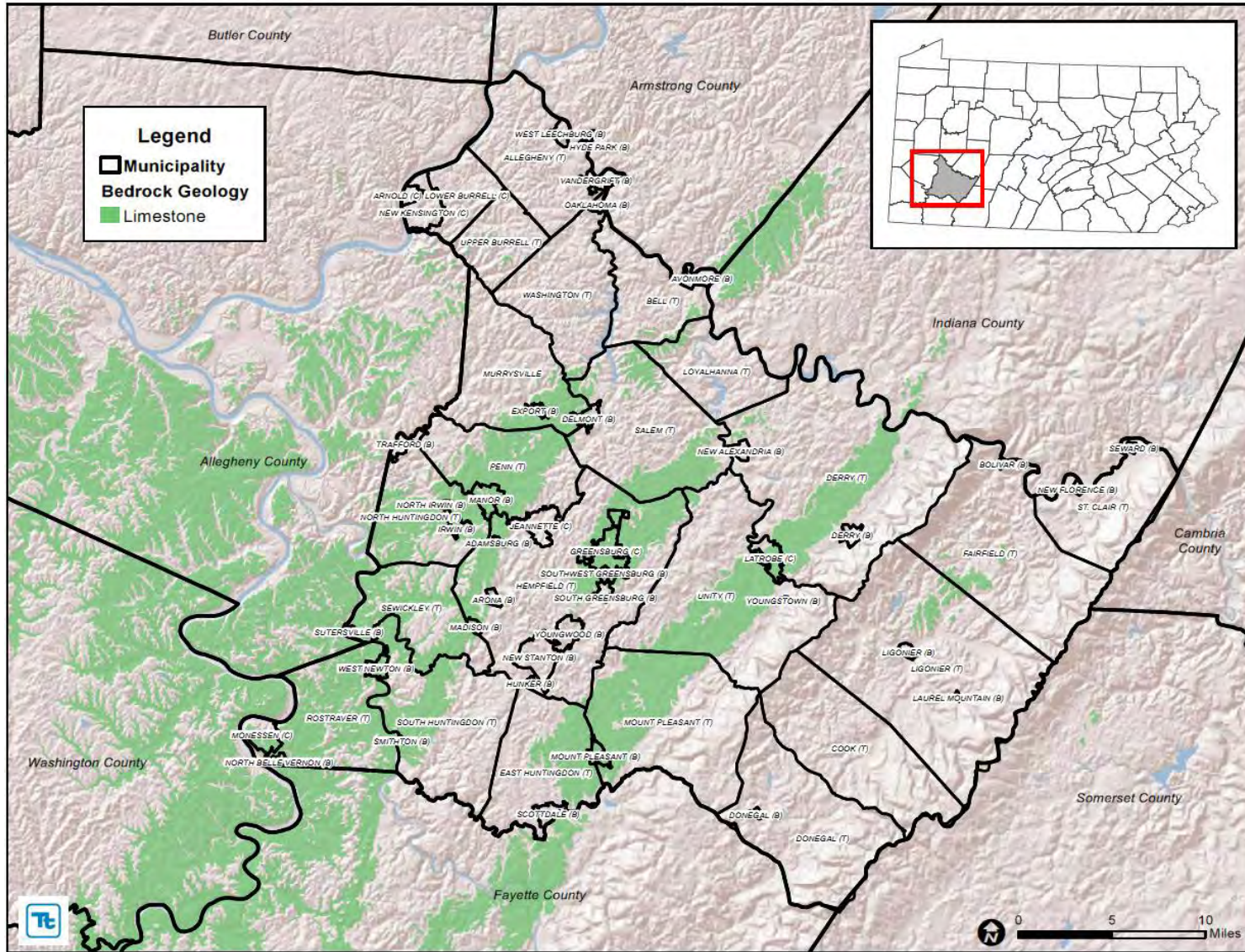


Source: PEMA 2013 (highlight added)





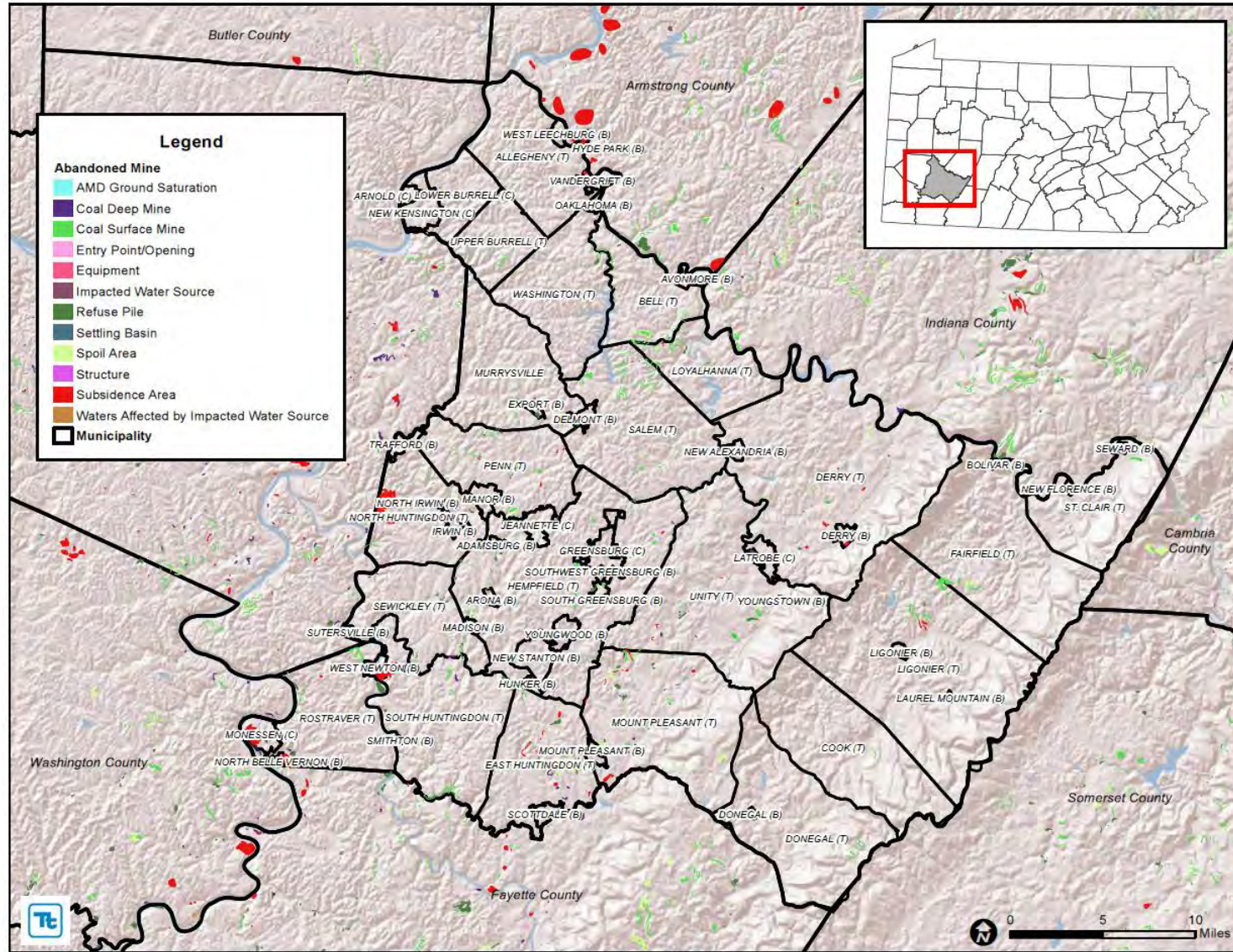
Figure 4.3.11-3. Westmoreland County Limestone Bedrock Geology



Source: Pennsylvania Bureau of Topographic and Geologic Survey 2001



Figure 4.3.11-4. Abandoned Mines in Westmoreland County



Source: Pennsylvania Department of Environmental Protection (PADEP) 2014  
 Note: Red areas indicate abandoned mines that have been identified as subsidence areas.

While fewer karst features have been mapped in existing urban areas, human activity can often be the cause of a subsidence area or sinkhole. Leaking water pipes or structures that convey stormwater runoff may also result in areas of subsidence as the water dissolves substantial amounts of rock over time. In some cases, construction, land grading, or earthmoving activities that cause changes in stormwater flow can trigger sinkhole events. Subsidence or sinkhole events may occur in the presence of mining activity, especially in areas where the cover of a mine is thin, or in areas where bedrock is not necessarily conducive to their formation. In their article titled “Sinkholes are Bad,” authors Piggott and Eynon indicated that sinkhole development normally occurs where the interval to the ground surface is less than three to five times the thickness of the extracted seam and the maximum interval is up to ten times the thickness of the extracted seam. Subsurface (i.e. underground) extraction of materials such as oil, gas, coal, metal ores (i.e. copper, iron, and zinc), clay, shale, limestone, or water may result in slow-moving or abrupt shifts in the ground surface (Piggott and Eynon 1978).

#### 4.3.11.2 Range of Magnitude

Based on the geologic formations underlying parts of Westmoreland County, subsidence and sinkhole events may occur gradually or abruptly. Events could result in minor elevation changes or deep, gaping holes in the ground surface. Subsidence and sinkhole events can cause severe damage in urban environments, although gradual events can be addressed before significant damage occurs. If long-term subsidence or sinkhole formation is not recognized and mitigation measures are not implemented, fractures or complete collapse of building foundations and roadways may result.

Sinkholes also may have negative effects on local groundwater. Groundwater in limestone and other similar carbonate rock formations can be easily polluted, because water moves readily from the earth’s surface down through solution cavities and fractures, thus undergoing very little filtration. Contaminants such as sewage, fertilizers, herbicides, pesticides, or industrial products are of concern.

The worst-case scenario for subsidence and sinkholes in Westmoreland County would be for a sinkhole to form in one of the major urban areas, namely the Cities of Greensburg, New Kensington, Lower Burrell, Jeanette, or Latrobe. A sinkhole in any one of these cities, either in a highly-trafficked pedestrian area or under one of the many high-traffic roadways or bridges, could potentially cause significant property damage and/or loss of life. The Vulnerability Assessment in Section 4.3.11.5 contains for further details on the population, general building stock, and critical facilities and infrastructure vulnerable to this hazard.

#### 4.3.11.3 Past Occurrence

The Pennsylvania Department of Conservation and Natural Resources (PA DCNR) Sinkhole Inventory Online Database shows no recorded sinkholes in Westmoreland County (PA DCNR Date Unknown). Pennsylvania Department of Transportation (PennDOT) District 12 records do not include any sinkholes. However, a search of local records reveals several historic sinkhole and subsidence events in the County. Incidents recorded between 2002 and 2013 are summarized in Table 4.3.11-1.

**Table 4.3.11-1. Reported Sinkholes in Westmoreland County, 2002-2013**

Date(s) of Event	Event Type	Municipality	Description	Source
Unknown	Subsidence	City of Arnold	A housing development in the City of Arnold built over an old landfill sank, endangering four homes	Westmoreland County
1992, 1995, 1996, and 1998	Subsidence	North Belle Vernon Borough/ Rostraver Township	Incidents have occurred within this 1-mile area of Westmoreland County in 1992, 1995, 1996, and 1998. There were 5 incidents in 1995 alone. The largest incident occurred involving a two-block area, including a number of homes, a supermarket, and auto dealership. The other incidents have involved residential structures.	Westmoreland County
March 1998	Sinkhole	New Alexandria Borough	Section of Rt. 981 collapsed, closing the road for over 1 week and resulting in a 4-mile detour for local residents.	Westmoreland County
May 2000	Sinkhole	New Alexandria Borough	Section of Rt. 981 (within 1 mile of the March 1998 sinkhole) collapsed, closing the road for over 1 week and resulting in a 4-mile detour for local residents.	Westmoreland County
September 2000	Subsidence	North Huntingdon Township	The Colonial Manor Apartments in North Huntingdon were condemned and 40 people had to be relocated when mine subsidence seriously damaged the 23-unit apartment complex.	Westmoreland County
October 2000	Subsidence	West Leechburg Borough	Two homes suffered foundation damage and loss of utilities.	Westmoreland County
September 16, 2002	Subsidence/ Sinkhole	City of Latrobe	Likely mine subsidence caused two sinkholes on Ligonier Street near the Timken Latrobe Steel facility. A third sinkhole that was 8 feet wide and 10 feet deep developed when a truck drove towards the two sinkholes to begin repairs. No injuries or property damage was reported.	Brownawell 2002
January 29, 2003	Subsidence/ Sinkhole	Rostraver Township	Mine subsidence resulted in a sinkhole about 3 feet in diameter on the edge of Dale Alley.	Shannon 2003
April 16, 2003	Sinkhole	Penn Township	A sinkhole 20 feet wide and 3 feet deep formed on Boxcartown Road. Repairs were estimated at \$30,000, including the cost to repair the April 20, 2003 sinkhole.	Stiles 2003
April 20, 2003	Sinkhole	Penn Township	A horseshoe-shaped sinkhole 3-4 feet deep and 300 feet long formed on Claridge-Elliott Road. Repairs were estimated at \$30,000, including the cost to repair the April 16, 2003 sinkhole.	Stiles 2003



## SECTION 4.3.11: RISK ASSESSMENT – SUBSIDENCE/SINKHOLE

Date(s) of Event	Event Type	Municipality	Description	Source
November 2004	Subsidence/ Sinkhole	North Belle Vernon Borough	Mine subsidence resulted in a sinkhole 2 feet deep and 60-80 feet wide on a property on Speer Street. Damage to a garage was in the thousands of dollars.	Panian 2004
March 2, 2007	Subsidence/ Sinkhole	Unity Township	Mine subsidence resulted in a sinkhole 8 feet wide, 20 feet long, and 10 feet deep on Union Cemetery Road.	Pattera 2007
October 4, 2008	Subsidence	Rostraver Township	Mine subsidence displaced two families on Lee Drive.	Tribune-Review 2008
October 1, 2010	Sinkhole	Murrysville Borough	Water main break on Meadowbrook Road resulted in a 4-foot-deep sinkhole. No injuries were reported; however, one person drove a car into the sinkhole.	Tribune-Review 2010
September 27, 2011	Sinkhole	City of Greensburg	4-foot-deep sinkhole formed on West Pittsburgh Street near South Pennsylvania Avenue.	Stiles 2011

#### 4.3.11.4 Future Occurrence

Sinkhole occurrence is a continuing phenomenon and is fairly common in the carbonate areas of Westmoreland County; the probability of a sinkhole forming in the County is high. In addition, because most (if not all) of Westmoreland County is honeycombed with inactive and active coalmines, the hazards of subsidence may occur at any time in any location in the County. Areas of particular concern are the West Leechburg Borough and North Belle Vernon/Rostraver Township areas. Potential losses caused by sinkhole formation are difficult to calculate for all existing buildings, critical facilities, and infrastructure, as the hazard area amounts to so much of the County. However, the future occurrence of subsidence areas and sinkholes is considered likely as defined by the Risk Factor Methodology probability criteria (further discussed in Section 4.4).

#### 4.3.11.5 Vulnerability Assessment

To understand risk, a community must evaluate the assets that are exposed or vulnerable in the identified hazard area. This section discusses the potential impact of the subsidence and sinkhole hazard on Westmoreland County in the following subsections:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on life, health and safety; general building stock; critical facilities; economy; and future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist understanding this hazard over time

##### 4.3.11.5.1 Overview of Vulnerability

Approximately 21 percent of Westmoreland County (219.3 miles) is underlain by carbonate bedrock. For the purposes of this planning effort, the area underlain by limestone bedrock is considered exposed to this hazard. Table 4.3.11-2 summarizes the municipalities vulnerable to sinkholes/subsidence events based on the presence of limestone bedrock and/or abandoned mines.

**Table 4.3.11-2. Municipalities Vulnerable to Sinkholes/Subsidence Events.**

Municipality	Carbonate Rock	Abandoned Mine	Abandoned Mine noted as 'Subsidence Area'
Adamsburg (B)	X		
Allegheny (T)			
Arnold (C)			
Arona (B)	X	X	
Avonmore (B)			
Bell (T)	X	X	
Bolivar (B)		X	
Cook (T)		X	
Delmont (B)	X	X	
Derry (B)		X	X
Derry (T)	X	X	X
Donegal (B)			

## SECTION 4.3.11: RISK ASSESSMENT – SUBSIDENCE/SINKHOLE

Municipality	Carbonate Rock	Abandoned Mine	Abandoned Mine noted as 'Subsidence Area'
Donegal (T)		X	
East Huntingdon (T)	X	X	X
East Vandergrift (B)			
Export (B)	X	X	X
Fairfield (T)	X	X	
Greensburg (C)	X	X	
Hempfield (T)	X	X	X
Hunker (B)			
Hyde Park (B)		X	X
Irwin (B)	X		
Jeannette (C)			
Latrobe (C)	X	X	X
Laurel Mountain (B)			
Ligonier (B)			
Ligonier (T)	X	X	X
Lower Burrell (C)		X	X
Loyalhanna (T)	X	X	X
Madison (B)	X		
Manor (B)	X		
Monessen (C)	X	X	X
Mount Pleasant (B)	X		
Mount Pleasant (T)	X	X	X
Murrysville	X	X	X
New Alexandria (B)			
New Florence (B)			
New Kensington (C)		X	X
New Stanton (B)			
North Belle Vernon (B)	X	X	X
North Huntingdon (T)	X	X	X
North Irwin (B)	X	X	
Oaklahoma (B)			
Penn (B)	X		
Penn (T)	X	X	X
Rostraver (T)	X	X	X
Salem (T)	X	X	X
Scottdale (B)			
Seward (B)			
Sewickley (T)	X	X	X
Smithton (B)	X		
South Greensburg (B)	X	X	
South Huntingdon (T)	X	X	X



Municipality	Carbonate Rock	Abandoned Mine	Abandoned Mine noted as 'Subsidence Area'
Southwest Greensburg (B)	X		
St. Clair (T)		X	
Sutersville (B)	X	X	X
Trafford (B)			
Unity (T)	X	X	X
Upper Burrell (T)	X	X	
Vandergrift (B)		X	X
Washington (T)	X	X	
West Leechburg (B)			
West Newton (B)	X	X	X
Youngstown (B)			
Youngwood (B)			

Source: Pennsylvania Bureau of Topographic and Geologic Survey 2001; PADEP 2014

Notes: B = Borough C = City T = Town

#### 4.3.11.5.2 Data and Methodology

Unlike the flood, wind, and earthquake hazards, no standard loss estimation models or methodologies exist for the subsidence/sinkhole hazard. In an attempt to estimate the County's vulnerability, the portion of the region underlain by limestone bedrock is considered exposed to natural subsidence. To determine the assets that are exposed to this hazard, available and appropriate bedrock geology spatial data generated by the Pennsylvania Bureau of Topographic and Geologic Survey was overlaid upon the hazard area. The limitations of this analysis are recognized and are only used to provide a general estimate. Over time, additional data will be collected to allow better analysis for this hazard. Available information and a preliminary assessment are provided in the sections below.

#### 4.3.11.5.3 Impact on Life, Health, and Safety

To estimate the population exposed to the hazard, the approximate hazard area (limestone bedrock) was overlaid upon the 2010 U.S. Census population data (U.S. Census 2010). The Census blocks with their center (centroid) within the boundary were used to calculate the estimated population exposed to this hazard. Table 4.3.11-3 summarizes the Westmoreland County population exposed to this hazard by municipality (U.S. Census 2010).

**Table 4.3.11-3. Estimated Population Located over Limestone Bedrock (U.S. Census 2010)**

Municipality	Total U.S. Census 2010 Pop.	Estimated Population Exposed	Percent of Total
Adamsburg (B)	172	172	100
Allegheny (T)	8,164	0	0
Arnold (C)	5,157	0	0
Arona (B)	370	0	0
Avonmore (B)	1,011	0	0
Bell (T)	2,348	83	3.5
Bolivar (B)	465	0	0
Cook (T)	2,250	0	0

## SECTION 4.3.11: RISK ASSESSMENT – SUBSIDENCE/SINKHOLE

Municipality	Total U.S. Census 2010 Pop.	Estimated Population Exposed	Percent of Total
Delmont (B)	2,686	663	24.7
Derry (B)	2,688	0	0
Derry (T)	14,502	6,475	44.6
Donegal (B)	120	0	0
Donegal (T)	2,403	0	0
East Huntingdon (T)	7,963	2,711	34.0
East Vandergrift (B)	674	0	0
Export (B)	917	468	51.0
Fairfield (T)	2,424	41	1.7
Greensburg (C)	14,892	14,653	98.4
Hempfield (T)	43,241	15,523	35.9
Hunker (B)	291	0	0
Hyde Park (B)	500	0	0
Irwin (B)	3,973	3,955	99.5
Jeannette (C)	9,654	0	0
Latrobe (C)	8,338	6,130	73.5
Laurel Mountain (B)	167	0	0
Ligonier (B)	1,573	0	0
Ligonier (T)	6,603	198	3.0
Lower Burrell (C)	11,761	0	0
Loyalhanna (T)	2,382	118	5.0
Madison (B)	397	397	100
Manor (B)	3,239	2,900	89.5
Monessen (C)	7,720	4,774	61.8
Mount Pleasant (B)	4,454	4,454	100
Mount Pleasant (T)	10,911	6,882	63.1
Murrysville	20,079	4,558	22.7
New Alexandria (B)	560	0	0
New Florence (B)	689	0	0
New Kensington (C)	13,116	0	0
New Stanton (B)	2,173	0	0
North Belle Vernon (B)	1,971	1,852	94.0
North Huntingdon (T)	30,609	22,310	72.9
North Irwin (B)	846	829	98.0
Oaklahoma (B)	809	0	0
Penn (B)	475	48	10.1
Penn (T)	20,005	13,651	68.2

Municipality	Total U.S. Census 2010 Pop.	Estimated Population Exposed	Percent of Total
Rostraver (T)	11,363	7,932	69.8
Salem (T)	6,623	2,371	35.8
Scottdale (B)	4,384	3	0.1
Seward (B)	495	0	0
Sewickley (T)	5,996	3,094	51.6
Smithton (B)	399	399	100
South Greensburg (B)	2,117	194	9.2
South Huntingdon (T)	5,796	1,742	30.1
Southwest Greensburg (B)	2,155	2,155	100
St. Clair (T)	1,518	0	0
Sutersville (B)	605	418	69.1
Trafford (B)	3,113	0	0
Unity (T)	22,607	9,512	42.1
Upper Burrell (T)	2,326	0	0
Vandergrift (B)	5,205	0	0
Washington (T)	7,422	301	4.1
West Leechburg (B)	1,294	0	0
West Newton (B)	2,633	2,612	99.2
Youngstown (B)	326	0	0
Youngwood (B)	3,050	0	0
<b>Westmoreland County Total</b>	<b>365,169</b>	<b>144,578</b>	<b>39.6</b>

Source: HAZUS-MH v2.1; Pennsylvania Bureau of Topographic and Geologic Survey, 2001

Notes: B = Borough      C = City      Pop. = Population      T = Town

#### 4.3.11.5.4 Impact on General Building Stock

As noted above, no standard loss estimation models exist for the subsidence/sinkhole hazard. In general, the built environment located on limestone is exposed to this hazard. In an attempt to estimate the general building stock vulnerable to this hazard, the associated building replacement values (buildings and contents) were determined for the identified Census blocks within the approximate hazard area. Table 4.3.11-4 lists the replacement value (structure and contents) of general building stock exposed to this hazard.

*Table 4.3.11-4 Estimated General Building Stock Located over Limestone Bedrock*

Municipality	Total GBS	Estimated GBS RCV Exposed	Percent of Total
Adamsburg (B)	\$25,285,000	\$25,285,000	100
Allegheny (T)	\$860,144,000	\$0	0
Arnold (C)	\$682,035,000	\$0	0
Arona (B)	\$34,487,000	\$512,000	1.5
Avonmore (B)	\$194,040,000	\$0	0
Bell (T)	\$223,407,000	\$1,543,000	0.7

## SECTION 4.3.11: RISK ASSESSMENT – SUBSIDENCE/SINKHOLE

Municipality	Total GBS	Estimated GBS RCV Exposed	Percent of Total
Bolivar (B)	\$42,361,000	\$0	0
Cook (T)	\$216,107,000	\$0	0
Delmont (B)	\$356,649,000	\$123,957,000	34.8
Derry (B)	\$249,190,000	\$0	0
Derry (T)	\$1,351,636,000	\$513,554,000	38.0
Donegal (B)	\$15,051,000	\$0	0
Donegal (T)	\$268,860,000	\$0	0
East Huntingdon (T)	\$789,027,000	\$338,665,000	42.9
East Vandergrift (B)	\$66,892,000	\$0	0
Export (B)	\$151,365,000	\$78,462,000	51.8
Fairfield (T)	\$200,613,000	\$3,248,000	1.6
Greensburg (C)	\$2,648,084,000	\$2,628,937,000	99.3
Hempfield (T)	\$4,444,319,000	\$1,796,615,000	40.4
Hunker (B)	\$32,319,000	\$0	0
Hyde Park (B)	\$138,823,000	\$0	0
Irwin (B)	\$575,893,000	\$552,597,000	96.0
Jeannette (C)	\$1,345,868,000	\$0	0
Latrobe (C)	\$1,405,181,000	\$1,132,657,000	80.6
Laurel Mountain (B)	\$37,097,000	\$0	0
Ligonier (B)	\$294,943,000	\$0	0
Ligonier (T)	\$1,186,877,000	\$36,115,000	3.0
Lower Burrell (C)	\$1,494,023,000	\$0	0
Loyalhanna (T)	\$169,516,000	\$26,036,000	15.4
Madison (B)	\$75,888,000	\$67,198,000	88.5
Manor (B)	\$302,731,000	\$276,428,000	91.3
Monessen (C)	\$921,147,000	\$499,280,000	54.2
Mount Pleasant (B)	\$1,048,779,000	\$1,048,779,000	100
Mount Pleasant (T)	\$1,336,531,000	\$974,959,000	72.9
Murrysville	\$2,745,052,000	\$541,624,000	19.7
New Alexandria (B)	\$103,270,000	\$0	0
New Florence (B)	\$66,297,000	\$0	0
New Kensington (C)	\$2,046,442,000	\$0	0
New Stanton (B)	\$314,433,000	\$0	0
North Belle Vernon (B)	\$261,957,000	\$249,164,000	95.1
North Huntingdon (T)	\$3,456,071,000	\$2,527,987,000	73.1
North Irwin (B)	\$62,678,000	\$50,057,000	79.9
Oaklahoma (B)	\$90,674,000	\$0	0
Penn (B)	\$37,791,000	\$3,805,000	10.1
Penn (T)	\$2,295,983,000	\$1,606,468,000	70.0

Municipality	Total GBS	Estimated GBS RCV Exposed	Percent of Total
Rostraver (T)	\$1,159,231,000	\$860,662,000	74.2
Salem (T)	\$1,184,469,000	\$239,523,000	20.2
Scottdale (B)	\$772,590,000	\$18,124,000	2.3
Seward (B)	\$59,865,000	\$0	0
Sewickley (T)	\$516,244,000	\$274,070,000	53.1
Smithton (B)	\$147,713,000	\$147,713,000	100
South Greensburg (B)	\$369,766,000	\$30,515,000	8.3
South Huntingdon (T)	\$530,761,000	\$205,502,000	38.7
Southwest Greensburg (B)	\$313,935,000	\$297,474,000	94.8
St. Clair (T)	\$101,946,000	\$0	0
Sutersville (B)	\$62,288,000	\$34,256,000	55.0
Trafford (B)	\$557,686,000	\$0	0
Unity (T)	\$2,639,193,000	\$985,954,000	37.4
Upper Burrell (T)	\$302,170,000	\$0	0
Vandergrift (B)	\$539,820,000	\$0	0
Washington (T)	\$689,234,000	\$20,582,000	3.0
West Leechburg (B)	\$131,996,000	\$0	0
West Newton (B)	\$317,727,000	\$303,382,000	95.5
Youngstown (B)	\$53,155,000	\$0	0
Youngwood (B)	\$538,819,000	\$0	0
<b>Westmoreland County Total</b>	<b>\$45,654,424,000</b>	<b>\$18,521,689,000</b>	<b>40.6</b>

Source: HAZUS-MH v2.1; Pennsylvania Bureau of Topographic and Geologic Survey, 2001

Notes:

B = Borough

GBS = General Building Stock

T = Town

C = City

RCV = Replacement Cost Value

#### 4.3.11.5.5 Impact on Critical Facilities

A number of critical facilities, transportation, and utility assets are located in the hazard area, and are also exposed to subsidence/sinkholes. Table 4.3.11-5 summarizes the number of essential facilities (police, fire, medical, and school facilities), airports, and military installations identified by the County HMP participants that are located within the identified hazard area.

**Table 4.3.11-5. Number of Critical Facilities Located in the Identified Hazard Area (Limestone Bedrock)**

Facility Type	Number Exposed
Airport	4
Fire	51
Hospital	2
Police	25
School	50
University	3
Military	1

#### 4.3.11.5.6 Impact on the Economy

Subsidence and sinkholes can also severely impact roads and infrastructure. As noted earlier, limestone formations underlie greater than 20 percent of the County. Major roadways that serve the County include two Interstate highways (I-70 and I-76), Pennsylvania Turnpike 66, and U.S. Highways 22 and 30; portions of each of these roadways are located in the identified subsidence/sinkhole hazard area. It is not possible to estimate potential future economic losses caused by subsidence/sinkhole events at this time.

#### 4.3.11.5.7 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across the County at the municipal level and are described in Section 4.4 of this Plan. Any new development within the identified hazard areas are anticipated to be exposed to risks associated with the subsidence and sinkhole hazard.

#### 4.3.11.5.8 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and at the local level, climate change has the potential to alter the prevalence and severity of weather extremes (U.S. Environmental Protection Agency [EPA] 2006).

Climate change factors such as an extended growing season, higher temperatures, and the possibility of more intense and less frequent summer rainfall, may lead to changes in water resource availability. As stated earlier in this profile, changes to the water balance of an area including over-withdrawal of groundwater, diverting surface water from a large area and concentrating it in a single point, artificially creating ponds of surface water, and drilling new water wells will cause sinkholes. These actions can also serve to accelerate the natural processes of bedrock degradation, which can have a direct impact on sinkhole creation.

The potential effects of climate change on Westmoreland County's vulnerability to subsidence/sinkhole events will need to be considered as more information develops regarding regional climate change impacts.

#### 4.3.11.5.9 Additional Data and Next Steps

While it is not possible to predict when and where the next subsidence or sinkhole event may take place, Westmoreland County emergency services including local fire and police departments are well equipped and prepared to respond to emergencies as they arise. The status of subsidence/sinkhole risk in the County will continue to be monitored and ongoing and new mitigation efforts will continue to be developed.



### 4.3.12 Wildfire

This section provides a profile of and vulnerability assessment for the wildfire hazard. A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. Wildfires often begin unnoticed and can spread quickly, creating dense smoke that can be seen for miles. A wildland fire is a wildfire in an area where development is essentially nonexistent, except for roads, railroads, power lines, and similar facilities. A wildland-urban interface (WUI) fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

Wildfires can occur at any time of the year, but are most likely in Westmoreland County during a drought, and can occur in fields, grass, and brush as well as in the forest itself. Under dry conditions or drought, wildfires have the potential to burn forests as well as croplands. Any small fire in a wooded area, if not quickly detected and suppressed, has the potential to burn out of control. Most wildfires are caused by human carelessness, negligence, and ignorance. However, some are precipitated by lightning strikes and, in rare instances, spontaneous combustion.

#### 4.3.12.1 Location and Extent

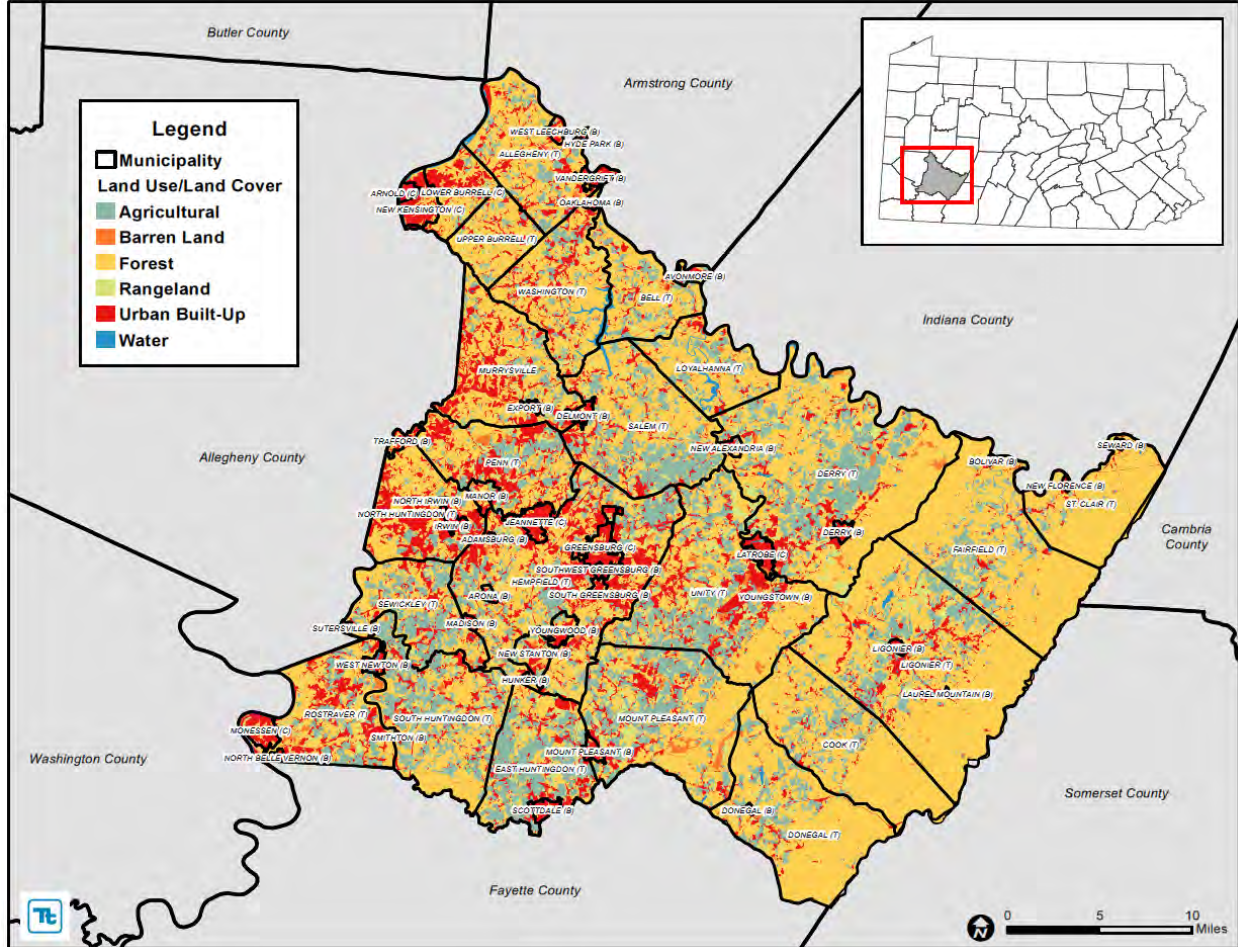
According to 2006 land use/land cover data, greater than 20 percent of the land in the County is developed, greater than 50 percent is forested, and 20 percent is agricultural (Table 4.3.12-1) (USGS 2011). As shown in Figure 4.3.12-1 below, developed areas are located adjacent to forests and farmlands. Both vegetation and structures serve as fuel for wildfire events.

*Table 4.3.12-1 Land Use Summary for Westmoreland County*

Land Use Category	Total Area (square miles)	Percent of Total
Agricultural	211.5	20.4
Barren Land	9.9	1.0
Forest	535.9	51.7
Rangeland	49.5	4.8
Urban Built Up	218.9	21.1
Water	10.6	1.0
<b>Total</b>	<b>1,036.5</b>	<b>100</b>

Source: USGS, 2011

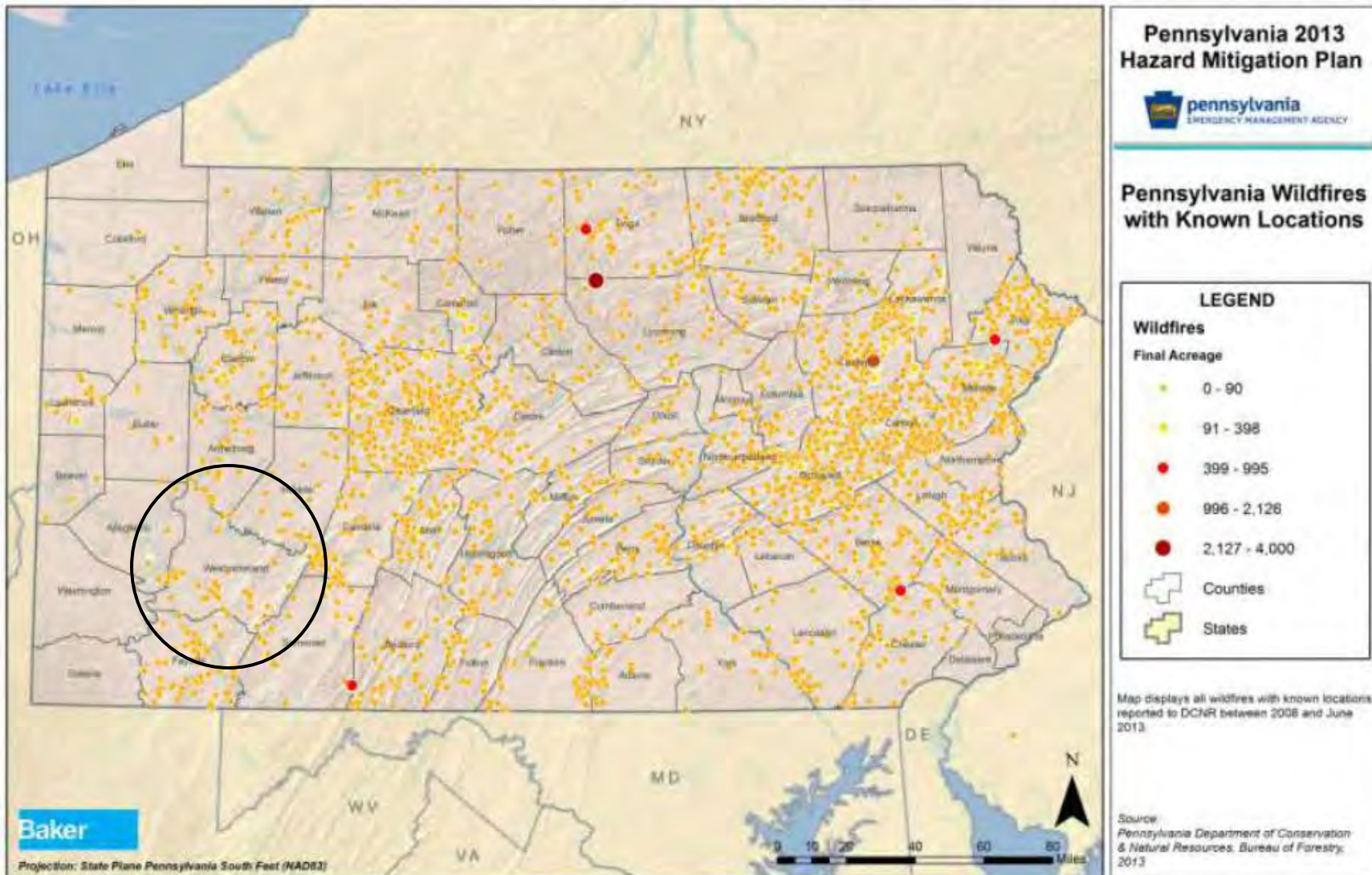
Figure 4.3.12-1. Land Cover in Westmoreland County



Source: Westmoreland County 2013

Figure 4.3.12-2 shows the locations of wildfires throughout Pennsylvania that the Pennsylvania Department of Conservation and Natural Resources (DCNR), Bureau of Forestry (BOF) responded to from 2002 to June 2013. Wildfires are known to be an underreported event. Many wildfires occur every year and are suppressed by volunteer fire departments without any response or assistance from BOF. Therefore, these locally controlled blazes may not be represented in BOF records.

Figure 4.3.12-2. Location of Wildfire Events responded to by BOF from 2002-2013



Source: PEMA 2013 (highlight added)



There are several tools available to estimate fire potential location and extent including, but not limited to the Wildland/Urban Interface, Wildland Fire Assessment System and DCNR Priority Landscape Analysis. These tools are discussed in further detail below.

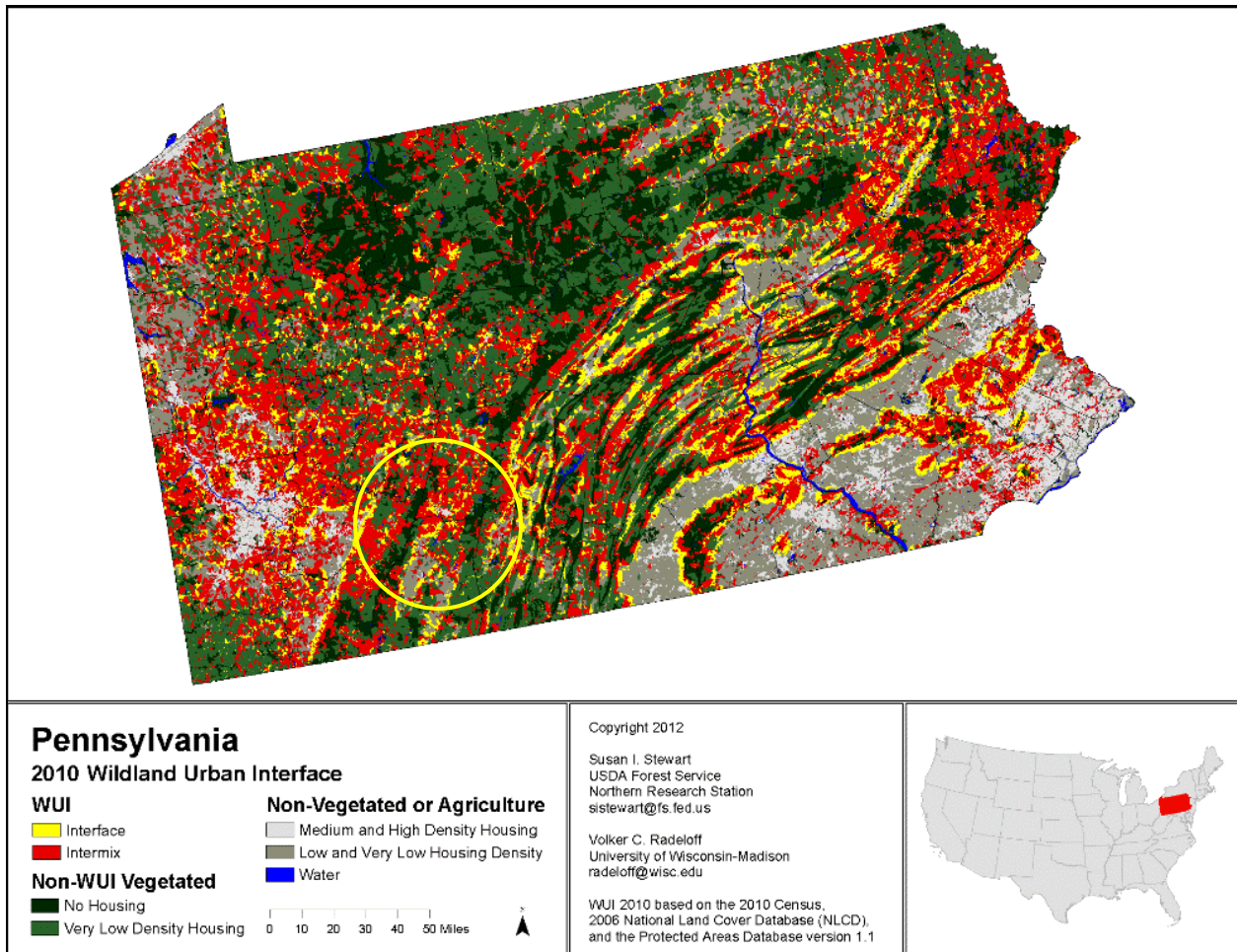
### **Wildland/Urban Interface (WUI)**

The WUI is the area where houses and wildland vegetation coincide. The WUI is divided into two categories: intermix and interface. Intermix WUI are areas where housing and vegetation “intermingle.” Intermix areas have more than one house per 40 acres and have more than 50 percent vegetation. Interface WUI are areas with housing in the vicinity of contiguous wildland vegetation. Interface areas have more than one house per 40 acres, have less than 50 percent vegetation, and are within 1.5 miles of an area larger than 1,235 acres that is more than 75 percent vegetated (University of Wisconsin Date Unknown).

The California Fire Alliance determined that areas within 1.5 miles of wildland vegetation are the approximate distance that firebrands can be carried from a wildland fire to the roof of a house. Therefore, even structures not located within the forest are at risk from wildfire. This buffer distance, along with housing density and vegetation type, were used to define the WUI (University of Wisconsin Date Unknown).

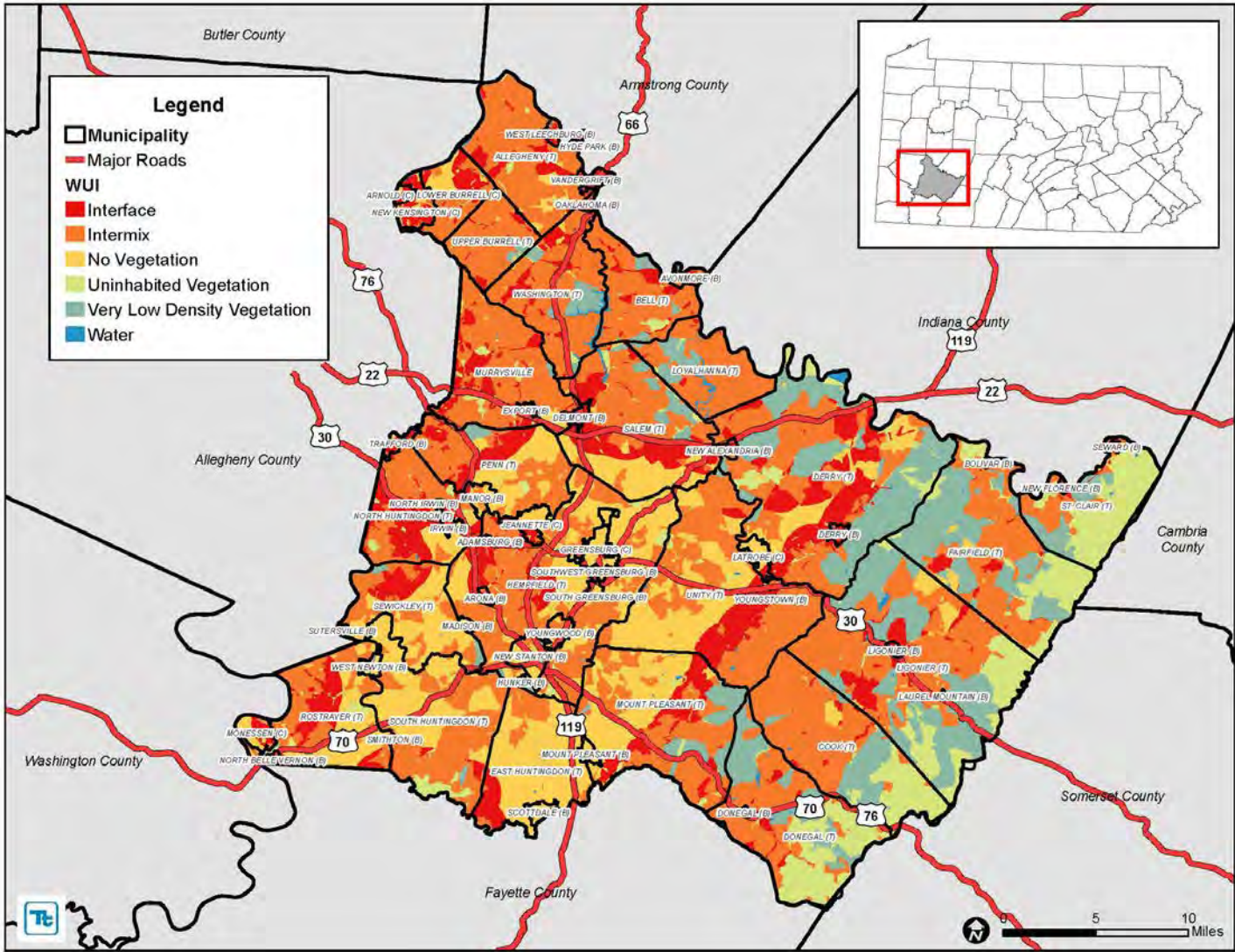
Concentrations of WUI can be seen along the East Coast of the U.S. including the area around Pittsburgh, Pennsylvania (which includes Westmoreland County, where housing density rarely falls below the threshold of one housing unit per 40 acres and forest cover is abundant). Areas where recreation and tourism dominate are also places where WUI is common (Stewart and others 2004). Figure 4.3.12-3 depicts the WUI for Pennsylvania in 2010, and Figure 4.3.12-4 illustrates the WUI for Westmoreland County. Greater than 50 percent is classified as WUI (intermix or interface) in the County.

*Figure 4.3.12-3. 2010 WUI for Pennsylvania*



Source: Stewart, 2012; highlight added

Figure 4.3.12-4. WUI for Westmoreland County



Source: Stewart and Radeloff 2012





### Wildland Fire Assessment System (WFAS)

The WFAS is an internet-based information system maintained at the National Interagency Fire Center (NIFC) in Boise, Idaho, that provides a national view of weather and fire potential, including national fires danger, weather maps and satellite-derived “Greenness” maps (USFS, 1994/2007). Each day during the fire season, national maps of selected fire weather and fire danger components of the National Fire Danger Rating System (NFDRS) are produced by the WFAS (WFAS 2012). The Fire Danger Rating level, shown in Table 4.3.12-2 below, takes into account current and antecedent weather, fuel types, and both live and dead fuel moisture. The adjective class rating is a method of normalizing rating classes across different fuel models, indexes, and station locations. It is based primarily on a fuel model cataloged for the station, the fire danger index selected to reflect staffing levels, and climatological class breakpoints. This information is provided by local station managers (USFS 2012).

*Table 4.3.12-2. Fire Danger Rating and Color Code*

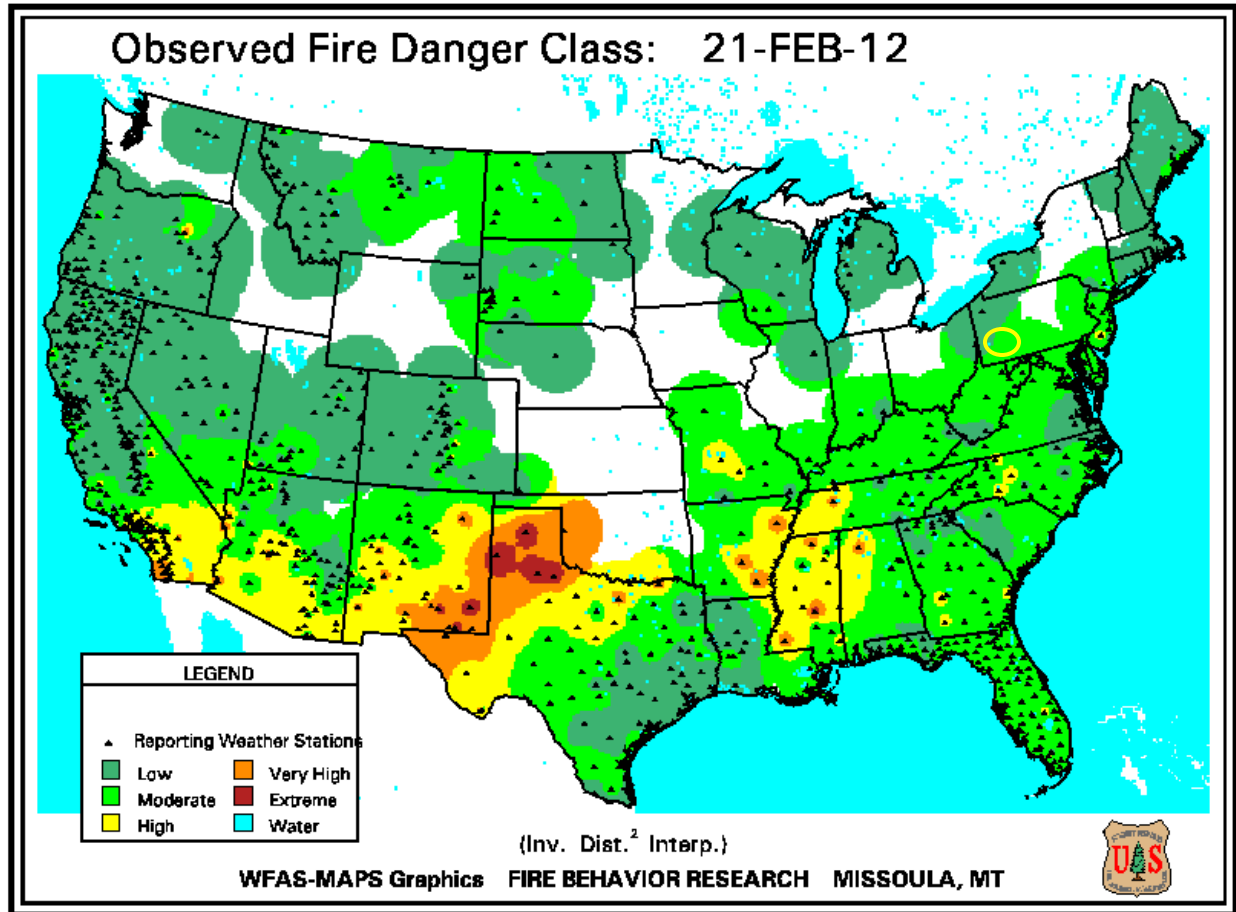
Fire Danger Rating and Color Code	Description
Low (L) (Dark Green)	Fuels do not ignite readily from small firebrands, although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering and burn in irregular fingers. There is little danger of spotting.
Moderate (M) (Light Green or Blue)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) (Yellow)	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly, and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while they are small.
Very High (VH) (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high-intensity characteristics such as long-distance spotting and fire whirlwinds when they burn into heavier fuels.
Extreme (E) (Red)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash (trunks, branches, and tree tops) or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

Source: USFS 2012

Maps of observed fire danger are also provided on a daily basis by the U.S. Forest Service. Observation maps are based on the mid-afternoon observations from the fire weather network as reported to the

Weather Information Management System (WIMS) (PEMA 2010). Figure 4.3.12-5 illustrates an example of an observed fire danger map for February 22, 2012.

*Figure 4.3.12-5. Observed Fire Danger Map (February 22, 2012)*



Source: USFS, 2012 ; the yellow oval indicates the position of Westmoreland County  
 Note: Dark Green (low), Light Green (moderate), Yellow (high), Orange (very high), Red (extreme)

### **Pennsylvania Department of Conservation and Natural Resources Priority Landscape Analysis**

The PA DCNR conducted a wildfire priority landscape analysis identifying areas where wildland fires are predicted to occur and become problematic. The areas are classified into high, medium, and low categories. The high classification is defined as an area prone to extreme fire behavior, with the potential to cause extensive property damage, or that could threaten the safety of the Commonwealth's citizens. Five datasets were used for this analysis:

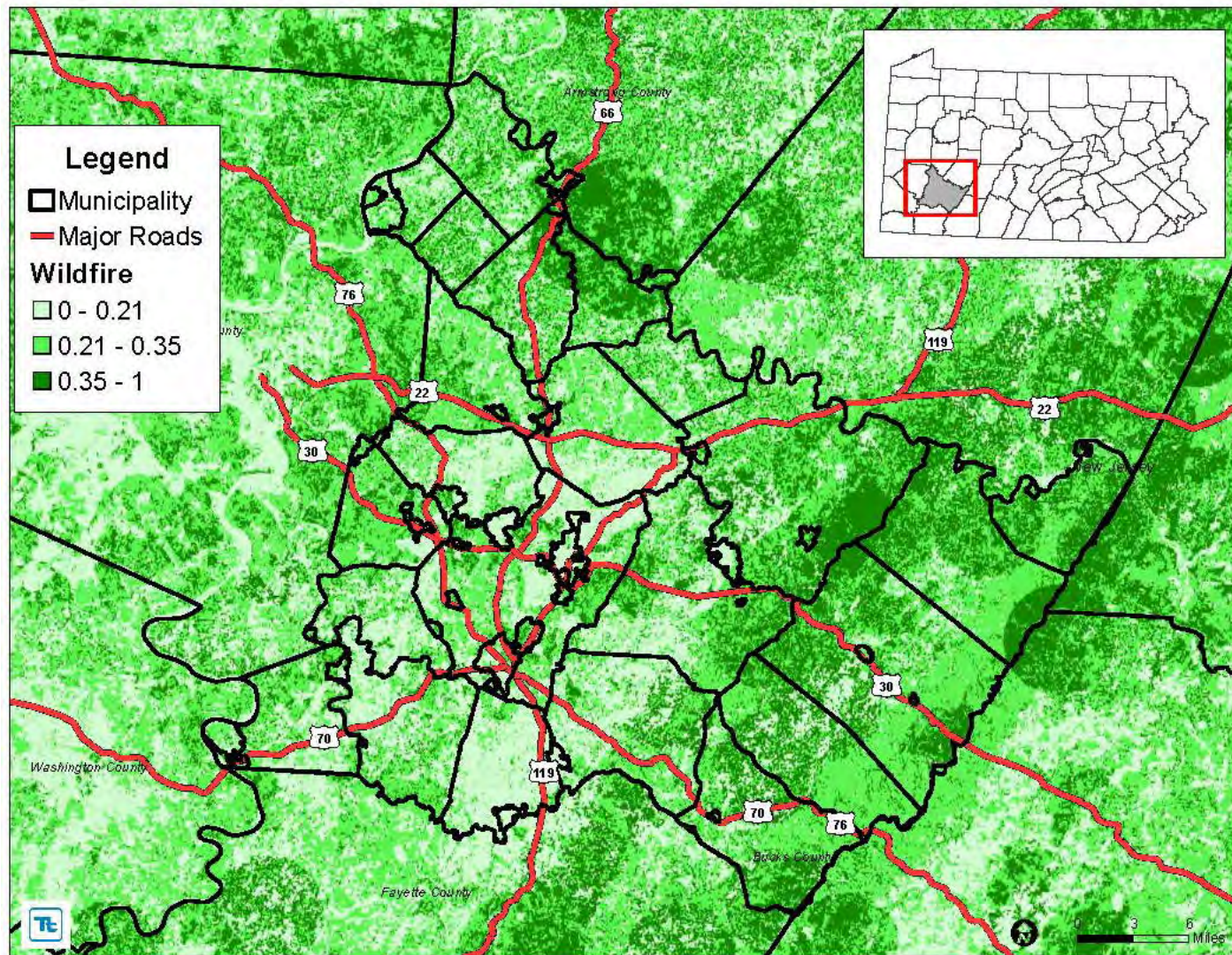
- 2002 WUI
- 2006 LANDFIRE
- 2002 – 2008 Pennsylvania Wildfire Point Origin Occurrences
- Percent Slope
- 2009 Local Assessment of Values, Risks, Hazards.

The WUI classifies areas where homes and other human development meet or intermingle with undeveloped land. LANDFIRE characterizes the land's vegetation into fuel models that predict various fire behavior intensities. The PA wildfire Point Origin Occurrences are records of wildland fire origins that have been reported. Percent slope aids in predicting fire behavior from the terrain. The local assessment of values, risks, and hazards is a municipality-based rating system: this assessment has been made by local wildland fire managers (PA DCNR, date unknown). Figure 4.3.12-6 illustrates the output for the wildfire priority landscapes model for Westmoreland County.

The greatest potential for wildfires is in the spring months of March, April, and May, and the autumn months of October and November. These months generally bring clear skies, high winds, low relative humidity, and prolonged periods of dry weather. In the spring, bare trees allow sunlight to reach the forest floor, drying fallen leaves and other ground debris. The same theory applies for the fall; however, the drier conditions are a more crucial factor. Most wildfires in Pennsylvania are caused by people, often by debris burns. Several fires have started in a person's backyard and traveled through dead grasses and weeds into bordering woodlands. According to the Pennsylvania 2013 Standard All-Hazard Mitigation Plan (PEMA 2013), 92 percent of Pennsylvania wildfires burn less than 10 acres and are suppressed within the first burning period.



Figure 4.3.12-6. Wildfire Priority Landscapes in Westmoreland County



Source: PADCNR

Notes: Low Priority = 0 – 0.21 (light green); Medium Priority = 0.21 – 0.35 (medium green); High Priority = 0.35 – 1 (dark green)

### 4.3.12.2 Range of Magnitude

Wildfire events in Westmoreland County can range from small fires that can be managed by local firefighters to large fires burning many acres of land. Large events may require evacuation from one or more communities and necessitate regional or national firefighting support. The impact of a severe wildfire can be devastating. A wildfire has the potential to kill people, livestock, fish, and wildlife. They often destroy property, valuable timber, forage, and recreational and scenic resources.

The largest wildfire in Pennsylvania in recent years burned 10,000 acres in the north-central area of the Commonwealth. This fire was controlled within a week. It destroyed five cabins, but there was no loss of life. Several other fires have burned more than 2,000 acres each and again have been controlled within a week of the reported start.

Wildfires in Westmoreland County have generally been small and easily contained. Since 2002, single events have been as minor as a small brushfire, while others have involved up to many acres. The worst-case scenario for Westmoreland County is a multiple-acre fire occurring during a period of drought, which could cause the fire to spread rapidly. Severe property damage could occur because much of the County is characterized by a wildland-urban interface. Refer to the “Vulnerability Assessment” below for additional details on potential losses in the County.

### 4.3.12.3 Past Occurrence

The 2010 PA HMP notes that the number of reported 37 wildfires burned 135.6 acres in Westmoreland County between 2002 and 2013. Table 4.3.12-3 lists all wildfires recorded by the PA Department of Conservation and Natural Resources from 2006 through 2013 and the fires to which the Westmoreland County Team 211 Rough Terrain Support Unit responded between 2010 and 2014. No wildfires were recorded in the National Climatic Data Center (NCDC) Storm Events Database.

**Table 4.3.12-3. Reported Wildfires in Westmoreland County**

Date	Location	Impacts
April 30, 2006	Donegal Township	Wildfire burned over .3 acres.
May 7, 2006	Derry Township	Wildfire burned over 5 acres.
May 7, 2006	Derry Township	Wildfire burned over .1 acres.
May 7, 2006	Derry Township	Wildfire burned over .1 acres.
September 23, 2007	Derry Township	Wildfire burned over .1 acres.
March 30, 2008	Cook Township	Wildfire burned over 7 acres.
April 16, 2008	Derry Township	Wildfire burned over 1 acres.
March 4, 2009	Mt. Pleasant	Wildfire burned over 10 acres.

## SECTION 4.3.12: RISK ASSESSMENT – WILDFIRE

Date	Location	Impacts
March 18, 2009	Mt. Pleasant	Wildfire burned over 1 acre. Resulted in 1 fatality.
April 2, 2009	Unity	Wildfire burned over .5 acres.
November 7, 2009	Donegal	Wildfire burned over 1 acre.
November 13, 2009	Donegal	Wildfire burned over 1 acre.
November 13, 2009	Donegal	Wildfire burned over 3 acres.
April 1, 2010	Derry Township	No information available
April 3, 2010	Slickville	8 firefighters were treated for smoke inhalation and exhaustion
April 3, 2010	Salem	Wildfire burned over 15 acres.
April 5, 2010	Cook Township	Wildfire burned over 4 acres.
October 21, 2010	Donegal	Wildfire burned over .1 acres.
November 12, 2010	Cook Township	Wildfire burned over 1 acre.
November 13, 2010	Cook Township	Wildfire burned over .1 acres.
January 9, 2012	Sewickley	Wildfire burned over .5 acres.
February 6, 2012	Sewickley	Wildfire burned over .5 acres.
February 28, 2012	Sewickley	Wildfire burned over 1 acre.
March 15, 2012	Allegheny	Wildfire burned over 2 acres.
April 7, 2012	Cook	Wildfire burned over 1 acre.
October 24, 2012	North Huntingdon	Wildfire burned over .25 acres.
October 25, 2012	Cook Township	No information available
November 10, 2012	Sewickley	Wildfire burned over .1 acres.



Date	Location	Impacts
November 12, 2012	Fairfield	Wildfire burned over 20 acres.
November 29, 2012	St. Clair	Wildfire burned over 3 acres.
March 23, 2013	South Huntingdon	Wildfire burned over 9 acres.
April 4, 2013	East Huntingdon	Wildfire burned over .25 acres.
April 5, 2013	Hempfield	Wildfire burned over 2.5 acres.
April 7, 2013	Sewickley	Wildfire burned over 3 acres.
April 8, 2013	Hempfield	Wildfire burned over .1 acres.
April 9, 2013	Unity	Wildfire burned over .1 acres.
April 9, 2013	Mt. Pleasant	Wildfire burned over .1 acres.
April 23, 2013	Stahlstown	Wildfire burned over 10 acres.
May 5, 2013	Ligonier Township	Wildfire burned over 36 acres.

Source: Westmoreland County Team 211 Rough Terrain Support Unit 2014; PA Department of Conservation and Natural Resources

#### 4.3.12.4 Future Occurrence

Wildfire experts say that demographic trends in the northeast U.S. are contributing to increased wildfire risks. Recent census data show more homes being built in rural areas closer to wildland areas. Forested areas are cleared for housing, and fuels in the form of logging slash and understory vegetation remain in close proximity to new residences, increasing the potential for wildfires. This trend, along with changing weather patterns and increasingly hot, dry periods throughout the U.S., increases wildfire risk in many communities.

It is likely that wildfires will affect Westmoreland County every year. However, the likelihood that one of those fires would attain significant size and intensity is unpredictable and highly dependent on environmental conditions and firefighting response. Weather conditions, particularly drought, increase the likelihood that wildfires will occur. Based on reported occurrences from the most recent years on record, the County can expect approximately three wildfires each year. The future occurrence of wildfires can therefore be considered *likely* as defined by the Risk Factor Methodology probability criteria (Section 4.4).

It is important to note that 98 percent of wildfires in Pennsylvania are human caused (PEMA 2013). Thus, there is rationale for including this hazard under the summary of human-made hazards.

Nonetheless, the critical inference to draw from this statistic is the fact that the occurrence of future wildfire events will strongly depend on patterns of human activity. Events are more likely to occur in wildfire-prone areas experiencing new or additional development.

#### 4.3.12.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed and vulnerable in the identified hazard area. The following text evaluates and estimates the potential impact of the wildfire hazard on the County, including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on (1) life, health and safety, (2) general building stock, (3) critical facilities, (4) economy, and (5) future growth and development
- Effects of climate change on vulnerability
- Further data collections that will assist understanding this hazard over time.

##### 4.3.12.5.1 Overview of Vulnerability

Wildfire hazards can impact significant areas of land, as evidenced by wildfires throughout the U.S. in recent years. Fire in urban areas has the potential for great damage to infrastructure, loss of life, and strain on lifelines and emergency responders because of the high density of population and structures that can be affected in these areas. Wildfire, however, can spread quickly, become a huge fire complex consisting of thousands of acres, and present greater challenges for allocating resources, defending isolated structures, and coordinating multi-jurisdictional response.

##### 4.3.12.5.2 Data and Methodology

Information regarding the wildfire hazard included input and data from PA DCNR, the University of Wisconsin-Madison, and the Steering Committee. The WUI (interface and intermix) obtained through the SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin-Madison, defines the wildfire hazard area. The asset data (population, building stock, and critical facilities) presented in the County Profile (Section 2) was used to support an evaluation of assets exposed and the potential impacts and losses associated with this hazard. Available and appropriate GIS data were overlaid on the hazard area to identify what assets are exposed to wildfire. The limitations of this analysis are recognized, and as such the analysis is used only to provide a general estimate.

##### 4.3.12.5.3 Impact on Life, Health, and Safety

As demonstrated by historical wildfire events, potential losses include human health and life of residents and responders. The most vulnerable populations include emergency responders and those within a short distance of the interface between the built environment and the wildland environment.

The population located within the WUI was overlaid on the 2010 Census population data to estimate the Westmoreland County population vulnerable to the wildfire hazard (U.S. Census 2010). The census blocks with their center within the hazard area were used to calculate the estimated population exposed to the wildfire hazard. Table 4.3.12-4 summarizes the estimated population exposed by municipality.

**Table 4.3.12-4. Estimated Population Located within the WUI in Westmoreland County**

Municipality	U.S. Census 2010 Population	Estimated Population Exposed	Percent of Total
Adamsburg (B)	172	172	100
Allegheny (T)	8,164	7,336	89.9
Arnold (C)	5,157	5,117	99.2
Arona (B)	370	370	100
Avonmore (B)	1,011	997	98.6
Bell (T)	2,348	2,294	97.7
Bolivar (B)	465	465	100
Cook (T)	2,250	2,069	92.0
Delmont (B)	2,686	2,486	92.6
Derry (B)	2,688	2,672	99.4
Derry (T)	14,502	10,858	74.9
Donegal (B)	120	120	100
Donegal (T)	2,403	1,873	77.9
East Huntingdon (T)	7,963	1,800	22.6
East Vandergrift (B)	674	674	100
Export (B)	917	852	92.9
Fairfield (T)	2,424	1,693	69.8
Greensburg (C)	14,892	0	0
Hempfield (T)	43,241	17,238	39.9
Hunker (B)	291	143	49.1
Hyde Park (B)	500	500	100
Irwin (B)	3,973	2,148	54.1
Jeannette (C)	9,654	3,217	33.3
Latrobe (C)	8,338	556	6.7
Laurel Mountain (B)	167	167	100
Ligonier (B)	1,573	1,503	95.5
Ligonier (T)	6,603	5,725	86.7
Lower Burrell (C)	11,761	5,680	48.3
Loyalhanna (T)	2,382	2,267	95.2
Madison (B)	397	109	27.5
Manor (B)	3,239	1,464	45.2
Monessen (C)	7,720	3,996	51.8
Mount Pleasant (B)	4,454	35	0.8
Mount Pleasant (T)	10,911	4,761	43.6
Murrysville	20,079	17,902	89.2
New Alexandria (B)	560	560	100
New Florence (B)	689	666	96.7
New Kensington (C)	13,116	11,841	90.3
New Stanton (B)	2,173	365	16.8

Municipality	U.S. Census 2010 Population	Estimated Population Exposed	Percent of Total
North Belle Vernon (B)	1,971	1,945	98.7
North Huntingdon (T)	30,609	24,515	80.1
North Irwin (B)	846	846	100
Oaklahoma (B)	809	809	100
Penn (B)	475	403	84.8
Penn (T)	20,005	11,795	59.0
Rostraver (T)	11,363	7,465	65.7
Salem (T)	6,623	4,854	73.3
Scottdale (B)	4,384	251	5.7
Seward (B)	495	495	100
Sewickley (T)	5,996	2,495	41.6
Smithton (B)	399	3	0.8
South Greensburg (B)	2,117	39	1.8
South Huntingdon (T)	5,796	2,475	42.7
Southwest Greensburg (B)	2,155	0	0
St. Clair (T)	1,518	1,109	73.1
Sutersville (B)	605	20	3.3
Trafford (B)	3,113	2,812	90.3
Unity (T)	22,607	12,732	56.3
Upper Burrell (T)	2,326	2,318	99.7
Vandergrift (B)	5,205	5,119	98.3
Washington (T)	7,422	7,399	99.7
West Leechburg (B)	1,294	1,294	100
West Newton (B)	2,633	352	13.4
Youngstown (B)	326	326	100
Youngwood (B)	3,050	652	21.4
<b>Westmoreland County Total</b>	<b>365,169</b>	<b>215,214</b>	<b>58.9</b>

Notes:

B = Borough; C = City; GBS = General Building Stock; T = Township; WUI = Wildland-Urban Interface

#### 4.3.12.5.4 Impact on General Building Stock

The most vulnerable structures to wildfire events are those within the WUI. Buildings constructed of wood or vinyl siding are generally more likely to be damaged by the fire hazard than buildings constructed of brick or concrete. The WUI was overlaid on the default building inventory in HAZUS-MH to estimate the buildings exposed to the wildfire hazard in Westmoreland County. The replacement cost value of the census blocks with their center in the WUI was totaled. Table 4.3.12-5 summarizes the estimated building stock inventory exposed by municipality.

**Table 4.3.12-5. Building Stock Replacement Value Located within the WUI in Westmoreland County**

Municipality	Total GBS	GBS Exposed	Percent of Total
Adamsburg (B)	\$25,285,000	\$25,285,000	100
Allegheny (T)	\$860,144,000	\$703,237,000	81.8
Arnold (C)	\$682,035,000	\$641,774,000	94.1
Arona (B)	\$34,487,000	\$34,300,000	99.5
Avonmore (B)	\$194,040,000	\$193,631,000	99.8
Bell (T)	\$223,407,000	\$207,062,000	92.7
Bolivar (B)	\$42,361,000	\$40,646,000	96.0
Cook (T)	\$216,107,000	\$189,897,000	87.9
Delmont (B)	\$356,649,000	\$322,183,000	90.3
Derry (B)	\$249,190,000	\$240,389,000	96.5
Derry (T)	\$1,351,636,000	\$865,877,000	64.1
Donegal (B)	\$15,051,000	\$14,713,000	97.8
Donegal (T)	\$268,860,000	\$131,549,000	48.9
East Huntingdon (T)	\$789,027,000	\$97,997,000	12.4
East Vandergrift (B)	\$66,892,000	\$61,184,000	91.5
Export (B)	\$151,365,000	\$144,250,000	95.3
Fairfield (T)	\$200,613,000	\$150,563,000	75.1
Greensburg (C)	\$2,648,084,000	\$791,000	0.0
Hempfield (T)	\$4,444,319,000	\$1,632,174,000	36.7
Hunker (B)	\$32,319,000	\$15,556,000	48.1
Hyde Park (B)	\$138,823,000	\$138,823,000	100
Irwin (B)	\$575,893,000	\$326,822,000	56.8
Jeannette (C)	\$1,345,868,000	\$545,919,000	40.6
Latrobe (C)	\$1,405,181,000	\$150,016,000	10.7
Laurel Mountain (B)	\$37,097,000	\$37,097,000	100
Ligonier (B)	\$294,943,000	\$256,849,000	87.1
Ligonier (T)	\$1,186,877,000	\$698,387,000	58.8
Lower Burrell (C)	\$1,494,023,000	\$711,351,000	47.6
Loyalhanna (T)	\$169,516,000	\$159,935,000	94.3
Madison (B)	\$75,888,000	\$32,789,000	43.2
Manor (B)	\$302,731,000	\$112,813,000	37.3
Monessen (C)	\$921,147,000	\$497,728,000	54.0
Mount Pleasant (B)	\$1,048,779,000	\$6,952,000	0.7
Mount Pleasant (T)	\$1,336,531,000	\$569,132,000	42.6
Murrysville	\$2,745,052,000	\$2,375,468,000	86.5
New Alexandria (B)	\$103,270,000	\$102,928,000	99.7
New Florence (B)	\$66,297,000	\$58,722,000	88.6
New Kensington (C)	\$2,046,442,000	\$1,475,247,000	72.1

Municipality	Total GBS	GBS Exposed	Percent of Total
New Stanton (B)	\$314,433,000	\$14,181,000	4.5
North Belle Vernon (B)	\$261,957,000	\$247,836,000	94.6
North Huntingdon (T)	\$3,456,071,000	\$2,701,021,000	78.2
North Irwin (B)	\$62,678,000	\$62,380,000	99.5
Oaklahoma (B)	\$90,674,000	\$90,674,000	100
Penn (B)	\$37,791,000	\$29,112,000	77.0
Penn (T)	\$2,295,983,000	\$1,233,469,000	53.7
Rostraver (T)	\$1,159,231,000	\$710,414,000	61.3
Salem (T)	\$1,184,469,000	\$945,508,000	79.8
Scottdale (B)	\$772,590,000	\$27,623,000	3.6
Seward (B)	\$59,865,000	\$58,452,000	97.6
Sewickley (T)	\$516,244,000	\$180,402,000	34.9
Smithton (B)	\$147,713,000	\$915,000	0.6
South Greensburg (B)	\$369,766,000	\$5,714,000	1.5
South Huntingdon (T)	\$530,761,000	\$170,272,000	32.1
Southwest Greensburg (B)	\$313,935,000	\$0	0.0
St. Clair (T)	\$101,946,000	\$70,249,000	68.9
Sutersville (B)	\$62,288,000	\$7,469,000	12.0
Trafford (B)	\$557,686,000	\$344,794,000	61.8
Unity (T)	\$2,639,193,000	\$1,282,758,000	48.6
Upper Burrell (T)	\$302,170,000	\$227,835,000	75.4
Vandergrift (B)	\$539,820,000	\$524,327,000	97.1
Washington (T)	\$689,234,000	\$681,161,000	98.8
West Leechburg (B)	\$131,996,000	\$128,055,000	97.0
West Newton (B)	\$317,727,000	\$24,734,000	7.8
Youngstown (B)	\$53,155,000	\$52,333,000	98.5
Youngwood (B)	\$538,819,000	\$70,524,000	13.1
<b>Westmoreland County Total</b>	<b>\$45,654,424,000</b>	<b>\$23,862,248,000</b>	<b>52.3</b>

Source: HAZUS-MH v2.1; Stewart and Radeloff, 2012

Notes:

B = Borough; C = City; GBS = General Building Stock; T = Township; WUI = Wildland-Urban Interface

#### 4.3.12.5.5 Impact on Critical Facilities

It is recognized that a number of critical facilities are located in the wildfire hazard area and are also vulnerable to the threat of wildfire. Many of these facilities are the locations for vulnerable populations (schools) and responding agencies to wildfire events (fire and police). Table 4.3.12-6 summarizes the number of critical facilities identified by the County plan participants that are located within the wildfire hazard area.



**Table 4.3.12-6. Number of Critical Facilities in the WUI in Westmoreland County**

Facility Type	Number
School	79
Police	24
Fire	69
Hospital	3
Airport	3
University	2

Source: Stewart and Radeloff, 2012; Westmoreland County

Notes:

B = Borough; C = City; T = Township; WUI = Wildland-Urban Interface

#### 4.3.12.5.6 Impact on the Economy

Wildfire events can have major economic impacts on a community from the initial loss of structures and the subsequent loss of revenue from destroyed businesses and decreases in tourism. Wildfire can also severely damage roads and infrastructure. Portions of both Interstates I-76 and I-70 run through WUI areas. This factor should be considered for evacuation route purposes.

#### 4.3.12.5.7 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across the County at the municipal level. It is anticipated that any new development and new residents in the WUI will be exposed to the wildfire hazard.

#### 4.3.12.5.8 Effect of Climate Change on Vulnerability

According to the U.S. Forest Service (USFS), climate change will likely alter the atmospheric patterns that affect fire weather. Changes in fire patterns will, in turn, affect carbon cycling, forest structure, and species composition. Climate change associated with elevated greenhouse gas concentrations may create an atmospheric and fuel environment that is more conducive to large, severe fires (USFS 2011).

Fire interacts with climate and vegetation (fuel) in predictable ways. Understanding the interactions of climate, fire, and vegetation interactions is essential for addressing issues associated with climate change that include:

- Effects on regional circulation and other atmospheric patterns that affect fire weather
- Effects of changing fire regimes on the carbon cycle, forest structure, and species composition, and
- Complications from land use change, invasive species and an increasing wildland-urban interface (USFS 2011).

It is projected that higher summer temperatures will likely increase the high fire risk by 10 to 30-percent. Fire occurrence and area burned could increase across the U.S. as a result of the increase of lightning activity, the frequency of surface pressure and associated circulation patterns conducive to surface drying, and fire-weather conditions, in general, which are conducive to severe wildfires. Warmer temperatures will also increase the effects of drought and increase the number of days each year with flammable fuels and extending fire seasons and areas burned (USFS, 2011).

Pennsylvania’s Department of Environmental Protection was directed by the Climate Change Act (Act 70 of 2008) to initiate a study of the potential impacts of global climate change on the Commonwealth. The June 2009 Pennsylvania Climate Impact Assessment’s main findings indicate Pennsylvania may be at increased risk for wildfires, but it is unclear how large the increase in risk will be (Shortle and others 2009).

Future changes in fire frequency and severity are difficult to predict. Global and regional climate changes associated with elevated greenhouse gas concentrations could alter large weather patterns, thereby affecting fire-weather conditions that are conducive to extreme fire behavior (USFS 2011).

#### 4.3.12.5.9 Additional Data and Next Steps

As the data and resources become available, a custom building inventory can be generated to capture the construction of structures, such as roofing material, fire detection equipment, and structure age, to further refine the vulnerability analysis. As stated earlier, buildings constructed of wood or vinyl siding are generally more likely to be damaged by the fire hazard than buildings constructed of brick or concrete. The proximity of these building types to the WUI should be identified for further evaluation. Development and availability of these data would permit a more detailed estimate of potential vulnerabilities, including loss of life and potential structural damages.

In locations where homes are at risk for wildfires, the BOF’s Wildland-Urban Interface Guidance Document is available to assist homeowners, community associations, local government, and developers to assess and mitigate the potential dangers of a wildfire. The guidance also provides information for developing an action plan in coordination with local emergency managers. Communities at risk for wildfires can adopt by local ordinance the “International Wildland-Urban Interface Code” of the Uniform Construction Code.

### 4.3.13 Tornado, Windstorm

This section provides a profile and vulnerability assessment for the tornado and windstorm hazard. The wind hazard includes various types of wind events, including windstorms and tornadoes, which are defined below.

Wind is air moving from high to low pressure. It is the rough horizontal movement of air (as opposed to an air current) caused by uneven heating of the Earth's surface. It occurs at all scales, from local breezes generated by heating of land surfaces and lasting tens of minutes to global winds resulting from solar heating of the Earth (FEMA 1997). There are different types of damaging winds: straight-line winds, downdrafts, downbursts, microbursts, gust fronts, derecho, bow echoes, and hook echoes.

- **Straight-line wind** is a term used to define any thunderstorm wind that is not associated with rotation. Straight-line winds are the movement of air from areas of higher pressure to areas of lower pressure – the greater the difference in pressure, the stronger the winds. It is used mainly to differentiate from tornadic winds.
- **Downdrafts** are a small-scale column of air that rapidly sinks toward the ground and usually results in a downburst.
- **Downbursts** are a strong downdraft with horizontal dimensions larger than 2.5 miles, resulting in an outward burst or damaging winds on or near the ground. They are usually associated with thunderstorms, but can occur with rain storms too weak to produce thunder.
- **Microbursts** are a small, concentrated downburst that produces an outward burst of damaging winds near the surface. They are typically short-lived, lasting only 5 to 10 minutes, with maximum wind speeds of up to 168 mph.
- A **gust front** is the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. They are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm (NSSL Date Unknown).
- A **derecho** is a widespread and long-lived windstorm associated with thunderstorms that are often curved (Johns and others 2011). The two major influences on the atmospheric circulation are the differential heating between the equator and the poles, and the rotation of the planet (FEMA 1997).
- **Bow echoes** are radar echoes that are linear but bent outward in a bow shape. Damaging straight-line winds often occur near the center of a bow echo (crest). Bow echoes can be more than 300 kilometers long, last for several hours, and produce extensive swaths of wind damage at the ground (NSSL Date Unknown).
- **Hook echoes** are radar echoes that are the most recognized and well known radar signature for tornadic supercells. This “hook-like” feature occurs when the strong counter-clockwise winds circling the mesocyclone (rotating updraft) are strong enough to wrap precipitation around the rain-free updraft area of the storm (Provic 2013).

High winds, other than tornadoes, are experienced in all parts of the U.S. Areas that experience the highest wind speeds are coastal regions from Texas to Maine and the Alaskan coast; however, exposed mountain areas experience winds at least as high as those along the coast (FEMA 1997; Robinson 2013). Wind begins with differences in air pressures. It is rough horizontal movement of air caused by uneven heating of the earth's surface. Wind occurs at all scales, from local breezes lasting a few minutes to global winds resulting from solar heating of the earth. Effects from high winds can include downed

trees/power lines, and damaged roofs/windows. The following table describes winds used by the National Weather Service (NWS).

*Table 4.3.13-1. NWS Wind Descriptions*

Descriptive Term	Sustained Wind Speed (mph)
Strong, dangerous, or damaging	≥40
Very Windy	30-40
Windy	20-30
Breezy, brisk, or blustery	15-25
None	5-15 or 10-20
Light or light and variable wind	0-5

Source: NWS 2010  
mph Miles per hour

Extreme windstorm events are associated with extra-tropical and tropical cyclones, winter cyclones, severe thunderstorms, and accompanying mesoscale offspring such as tornadoes and downbursts. Winds vary from zero at ground level to 200 mph in the upper atmospheric jet stream at 6 to 8 miles above the earth's surface (FEMA 1997).

A type of windstorm that is experienced often during rapidly moving thunderstorms is a derecho. A derecho is a long-lived windstorm that is associated with a rapidly moving squall line of thunderstorms. It produces straight-line winds gusts of at least 58 mph and often has isolated gusts exceeding 75 mph. As a result, trees generally fall and debris is blown in one direction. To be considered a derecho, these conditions must continue along a path of at least 240 miles. Derechos are more common in the Great Lakes and Midwest regions of the U.S., though, on occasion, can persist into the mid-Atlantic and northeast U.S. (ONJSC Rutgers University 2013).

Tornadoes are nature's most violent storms and can cause fatalities and devastate neighborhoods in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 250 mph. Damage paths can be greater than 1 mile wide and 50 miles long. Tornadoes typically develop from either a severe thunderstorm or hurricane as cool air rapidly overrides a layer of warm air. Tornadoes typically move at speeds between 30 and 125 mph and can generate internal winds exceeding 300 mph. The lifespan of a tornado rarely is longer than 30 minutes (FEMA 1997). High wind velocity and wind-blown debris, along with lightning or hail, result in the damage caused by tornadoes. Destruction caused by tornadoes depends on the size, intensity, and duration of the storm. Tornadoes cause the greatest damage to structures that are light, such as residential homes and mobile homes, and tend to remain localized during impact (NVRC 2006).

#### 4.3.13.1 Location and Extent

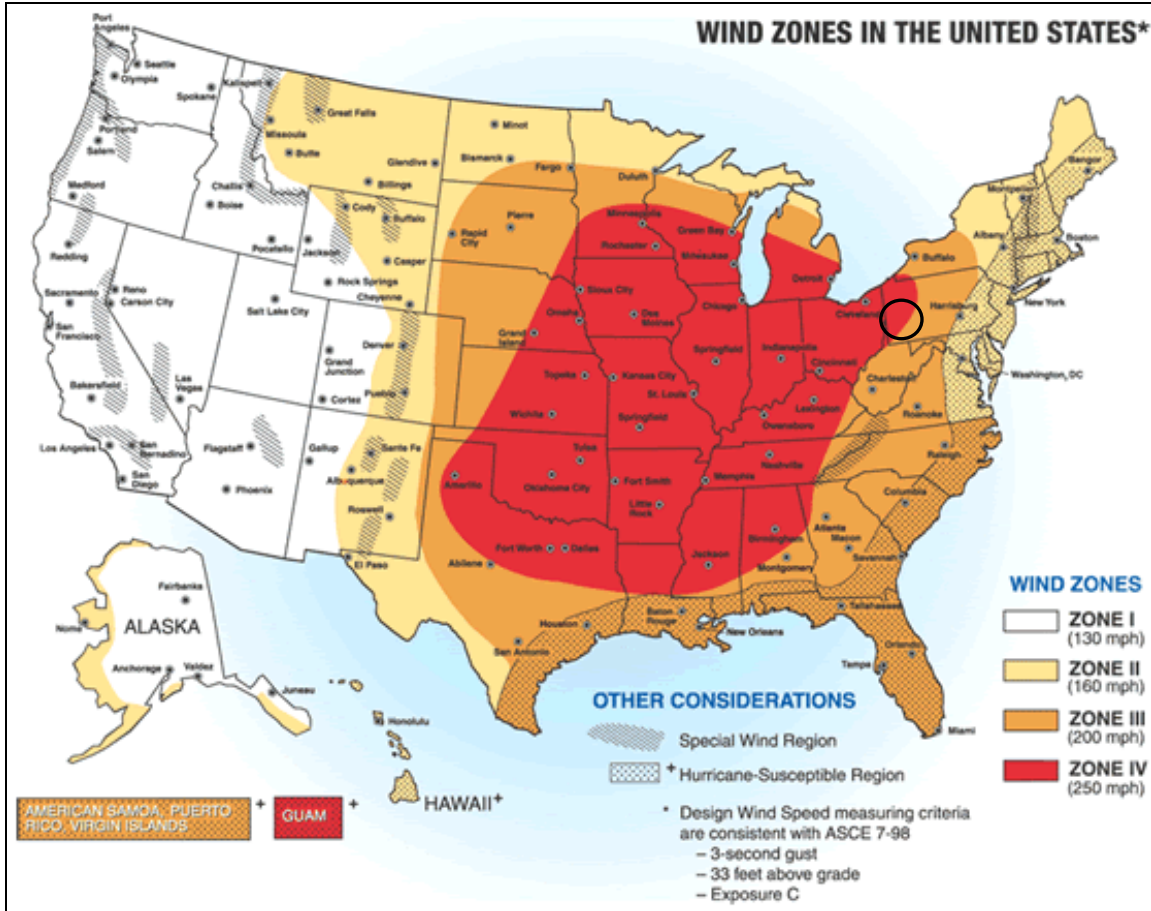
Tornadoes and windstorms can occur throughout Pennsylvania. Tornadoes are usually localized; however, severe thunderstorms can result in conditions favorable to the formation of numerous or long-lived tornadoes. Straight-line winds and windstorms are experienced on a region-wide scale (PEMA 2010).

#### Windstorms

Figure 4.3.13-1 indicates how the frequency and strength of windstorms affects the U.S. and the general location of the most wind activity. This figure is based on 40 years of tornado history and 100 years of hurricane history collected by the Federal Emergency Management Agency (FEMA). States located in Wind Zone IV have experienced the greatest number of tornadoes and the strongest tornadoes (NVRC

2006). Westmoreland County is located in Wind Zone II with speeds up to 160 miles per hour, with some western portions of the county lying within Zone IV with potential wind speeds up to 250 mph. Table 4.3.13-2 describes the various wind zones of the U.S.

**Figure 4.3.13-1. Wind Zones in the U.S.**



Source: FEMA, 2010

Note: The black oval indicates the approximate location of Westmoreland County.

**Table 4.3.13-2. Wind Zones in the U.S.**

Wind Zones	Areas Affected
Zone I (130 mph)	All of Washington, Oregon, California, Idaho, Utah, and Arizona. Western parts of Montana, Wyoming, Colorado, and New Mexico. Most of Alaska, except the east and south coastlines.
Zone II (160 mph)	Eastern parts of Montana, Wyoming, Colorado, and New Mexico. Most of North Dakota. Northern parts of Minnesota, Wisconsin, and Michigan. Western parts of South Dakota, Nebraska, and Texas. All New England States. Eastern parts of New York, Pennsylvania, Maryland, and Virginia. Washington, DC.
Zone III (200 mph)	Areas of Minnesota, South Dakota, Nebraska, Colorado, Kansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, Tennessee, Kentucky, Pennsylvania, New York, Michigan, and Wisconsin. Most or all of Florida, Georgia, South Carolina, North Carolina, Virginia, and West Virginia. All of American Samoa, Puerto Rico, and Virgin Islands.

Wind Zones	Areas Affected
Zone IV (250 mph)	Mid U.S. ,including all of Iowa, Missouri, Arkansas, Illinois, Indiana, and Ohio and parts of adjoining states of Minnesota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, Tennessee, Kentucky, Pennsylvania, Michigan, and Wisconsin. Guam.
Special Wind Region	Isolated areas in the following states: Washington, Oregon, California, Idaho, Utah, Arizona, Montana, Wyoming, Colorado, and New Mexico. The borders between Vermont and New Hampshire; between New York, Massachusetts, and Connecticut; between Tennessee and North Carolina.
Hurricane Susceptible Region	Southern U.S. coastline from Gulf Coast of Texas eastward to include entire State of Florida. East coastline from Maine to Florida, including all of Massachusetts, Connecticut, Rhode Island, Delaware, and Washington DC. All of Hawaii, Guam, American Samoa, Puerto Rico, and Virgin Islands.

Source: FEMA, 2010

## Tornadoes

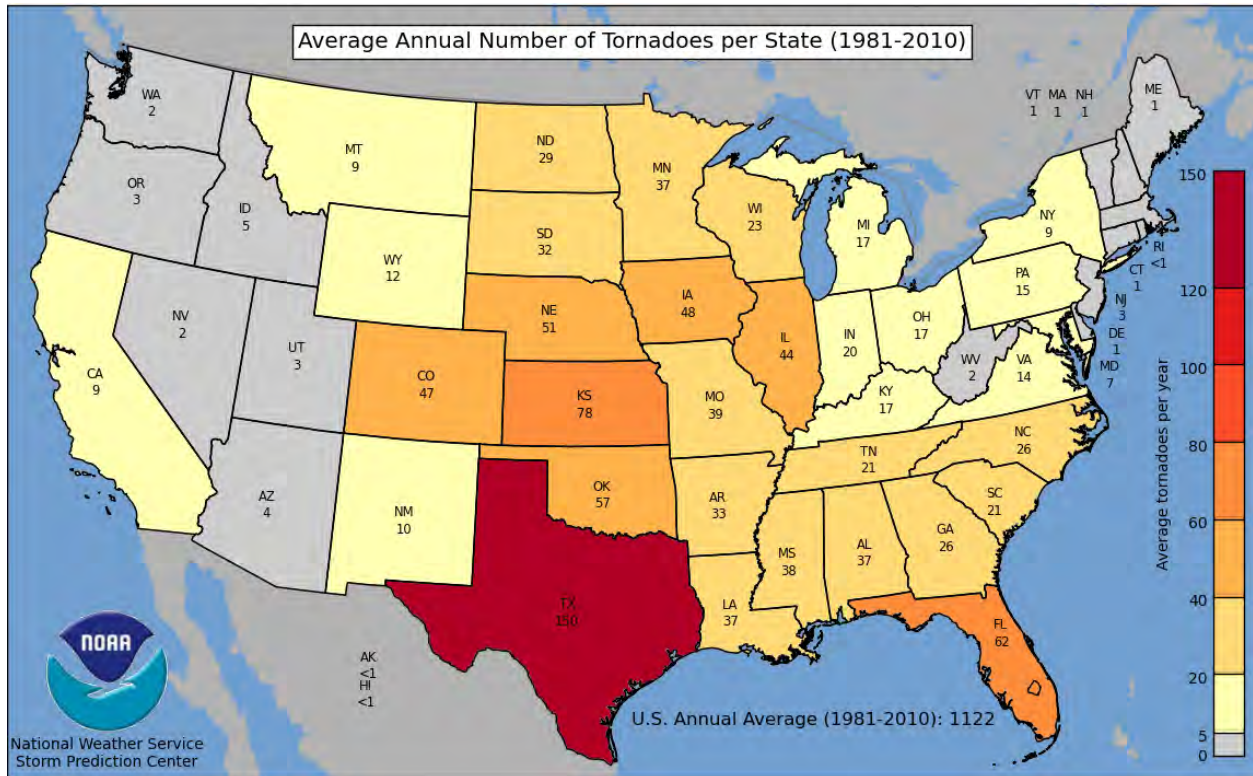
The U.S. experiences more tornadoes than any other country. In a typical year, approximately 1,000 tornadoes affect the U.S. The peak of the U.S. tornado season is April through June, with the highest concentration of tornadoes in the central U.S., although tornadoes can occur at any time of year (NWS 2011). Tornadoes tend to strike in the afternoons and evening, the warmest hours of the day, with approximately 80 percent of all tornadoes striking between noon and 9:00 p.m. (PEMA 2013).

Tornado movement is characterized in two ways: direction and speed of the spinning winds, and forward movement of the tornado and storm track. Rotational wind speeds of the vortex can range from 100 mph to more than 250 mph. In addition, the speed of forward motion can be zero to 45 or 50 mph. Therefore, some estimates place the maximum velocity (combination of ground speed, wind speed, and upper winds) of tornadoes at about 300 mph. The forward motion of the tornado path can be a few hundred yards or several hundred miles in length. The width of tornadoes can vary greatly, but they generally range in size from less than 100 feet to more than a mile in width. Some tornadoes never touch the ground and are short-lived, while others may touch the ground several times.

While the extent of tornado damage is usually localized, the extreme winds of this vortex can be among the most destructive on earth when they move through populated, developed areas.

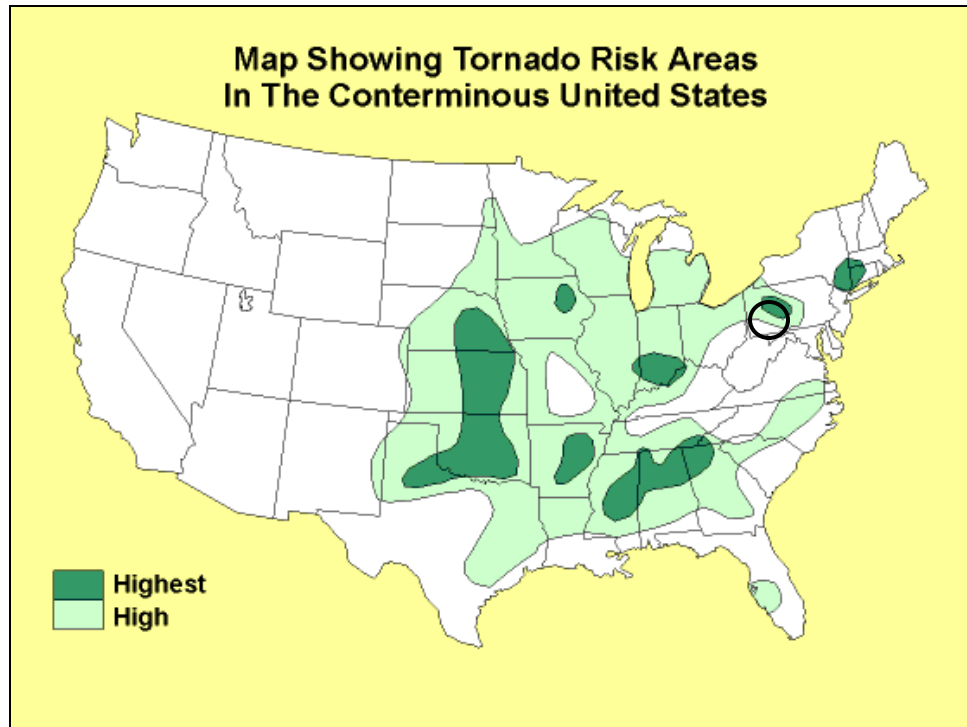
Figure 4.3.13-2 shows the annual average number of tornadoes between 1981 and 2010 (SPC 2012). The Commonwealth of Pennsylvania experienced an average of 15 tornado events annually between 1981 and 2010.



**Figure 4.3.13-2 Annual Average Number of Tornadoes in the U.S., 1981 to 2010**

Source: SPC, 2012

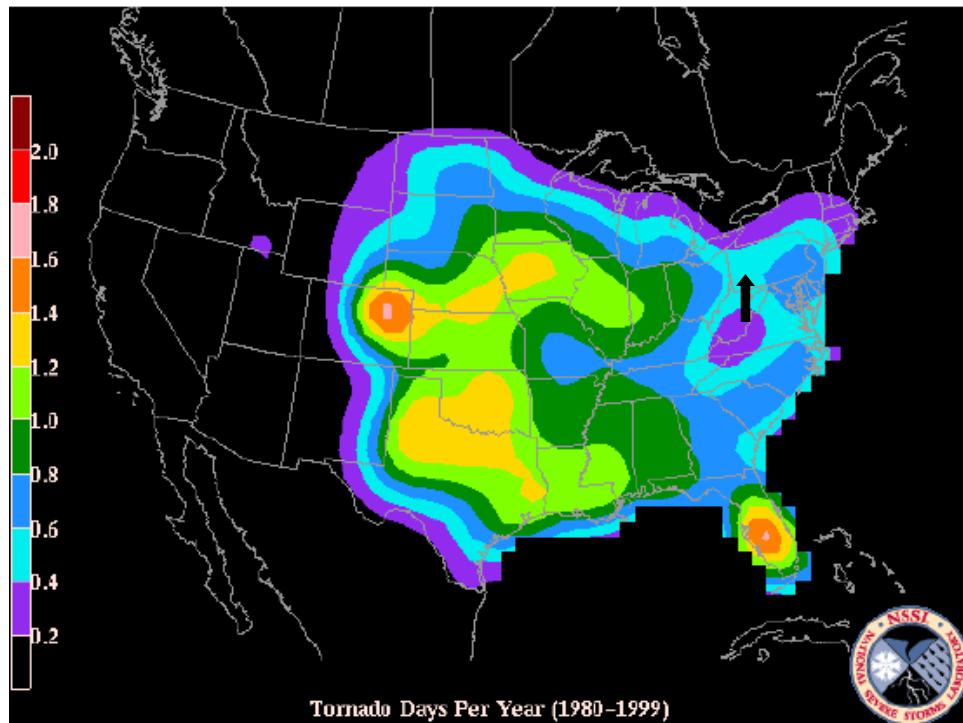
Figure 4.3.13-3 indicates that a large portion of Pennsylvania is at high risk for tornadoes; with a portion considered highest risk. According to this graphic, Westmoreland County has a relatively low risk for tornado. Details regarding historical tornado events are discussed in the Past Occurrences section of this profile.

*Figure 4.3.13-3. Tornado Risk in the U.S.*

Source: American Red Cross, 2010

Note: The black circle indicates the general location of Westmoreland County.

A study from the National Oceanic and Atmospheric Administration's (NOAA's) National Severe Storms Laboratory (NSSL) provided estimates of the long-term threat from tornadoes. The NSSL used historical data to estimate the daily probability of tornado occurrences across the U.S., no matter the magnitude of the tornado. Figure 4.3.13-4 shows the estimates prepared by the NSSL. In Pennsylvania, it is estimated that the probability that a tornado will occur is 0.2 to 0.8 day per year. In Westmoreland County, it is estimated that the probability of a tornado occurring is 0.4 to 0.6 day per year (NSSL 2003).

*Figure 4.3.13-4. Total Annual Threat of Tornado Events in the U.S., 1980-1999*

Source: NSSL, 2003

Notes: The mean number of days per year with one or more events within 25 miles of a point is shown here. The fill interval for tornadoes is 0.2, with the purple starting at 0.2 days. For the non-tornadic threats, the fill interval is 1, with the purple starting at 1. For the significant (violent), it is 5 days per century (millennium).

The black arrow indicates the general location of Westmoreland County.

#### 4.3.13.2 Range of Magnitude

Windstorms are generally defined as sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. A tornado's magnitude is classified using the Enhanced Fujita Scale, which is further discussed below.

The magnitude or severity of a tornado was originally categorized using the Fujita Scale (F-Scale) or the Pearson Fujita Scale introduced in 1971, based on a relationship between the Beaufort Wind Scales (B-Scales) (measure of wind intensity) and the Mach number scale (measure of relative speed). It is used to rate the intensity of a tornado by examining the damage caused by the tornado after it has passed over a man-made structure (Tornado Project Date Unknown). The F-Scale categorizes each tornado by intensity and area. The scale is divided into six categories, F0 (Gale) to F5 (Incredible) (Edwards 2013).

Although the F-Scale has been in use for more than 30 years, there are limitations in the scale. The primary limitations are a lack of damage indicators, no account of construction quality and variability, and no definitive correlation between damage and wind speed. These limitations have led to the inconsistent rating of tornadoes and, in some cases, an overestimate of tornado wind speeds. The limitations listed above led to the development of the Enhanced Fujita Scale (EF Scale). The Texas Tech University Wind Science and Engineering (WISE) Center, along with a forum of nationally renowned meteorologists and wind engineers from across the country, developed the EF Scale (WISE 2004).

The EF Scale became operational on February 1, 2007. It is used to assign tornadoes a rating based on estimated wind speeds and related damage. When tornado-related damage is surveyed, it is compared with a list of Damage Indicators (DIs) and Degree of Damage (DOD), which help better estimate the range of wind speeds produced by the tornado. From that, a rating is assigned, similar to that of the F-Scale, with six categories from EF0 to EF5, representing increasing degrees of damage. The EF Scale was revised from the original F-Scale to reflect better examinations of tornado damage surveys. This new scale has to do with how most structures are designed (NWS 2007). Table 4.3.13-3 displays the EF Scale and each of its six categories.

**Table 4.3.13-3. Enhanced Fujita Damage Scale**

EF-Scale Number	Intensity Phrase	Wind Speed (mph)	Type of Damage Done
EF0	Light tornado	65–85	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	Moderate tornado	86-110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	Significant tornado	111-135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	Severe tornado	136-165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	Devastating tornado	166-200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown, and small missiles generated.
EF5	Incredible tornado	>200	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); high-rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NWS 2007

The EF Scale takes into account more variables than the original F-Scale did in assigning a wind speed rating to a tornado. The EF Scale incorporates 28 DIs, such as building type, structures, and trees. There are eight DODs for each damage indicator, ranging from the beginning of visible damage to complete destruction of the damage indicator. Table 4.3.13-4 lists the 28 DIs. A description is provided for each one of these indicators of the typical construction for that category. Each DOD in every category is assigned an expected estimate of wind speed, a lower bound of wind speed, and an upper bound of wind speed.

**Table 4.3.13-4. EF Scale Damage Indicators**

Number	Damage Indicator	Abbreviation	Number	Damage Indicator	Abbreviation
1	Small barns, farm outbuildings	SBO	15	School - 1-story elementary (interior or exterior halls)	ES
2	One- or two-family residences	FR12	16	School - jr. or sr. high school	JHSH
3	Single-wide mobile home (MHSW)	MHSW	17	Low-rise (1-4 story) bldg.	LRB
4	Double-wide mobile home	MHDW	18	Mid-rise (5-20 story) bldg.	MRB
5	Apt, condo, townhouse (3 stories or less)	ACT	19	High-rise (over 20 stories)	HRB
6	Motel	M	20	Institutional bldg. (hospital, govt. or university)	IB
7	Masonry apt. or motel	MAM	21	Metal building system	MBS
8	Small retail bldg. (fast food)	SRB	22	Service station canopy	SSC
9	Small professional (doctor office, branch bank)	SPB	23	Warehouse (tilt-up walls or heavy timber)	WHB
10	Strip mall	SM	24	Transmission line tower	TLT
11	Large shopping mall	LSM	25	Free-standing tower	FST
12	Large, isolated ("big box") retail bldg.	LIRB	26	Free standing pole (light, flag, luminary)	FSP
13	Automobile showroom	ASR	27	Tree - hardwood	TH
14	Automotive service building	ASB	28	Tree - softwood	TS

Source: SPC, Date Unknown

Since the EF Scale went into effect in February 2007, previous occurrences and losses associated with historical tornado events, described in the Past Occurrences section of this hazard profile, are based on the former Fujita Scale. Events after February 2007 are based on the Enhance Fujita Scale.

The most severe tornado to hit Westmoreland County was an F4 on June 3, 1980. It was 33 yards wide and left a path 7.6 miles long. No deaths or injuries were reported, but damages were approximately \$250 million (NCDC 2013).



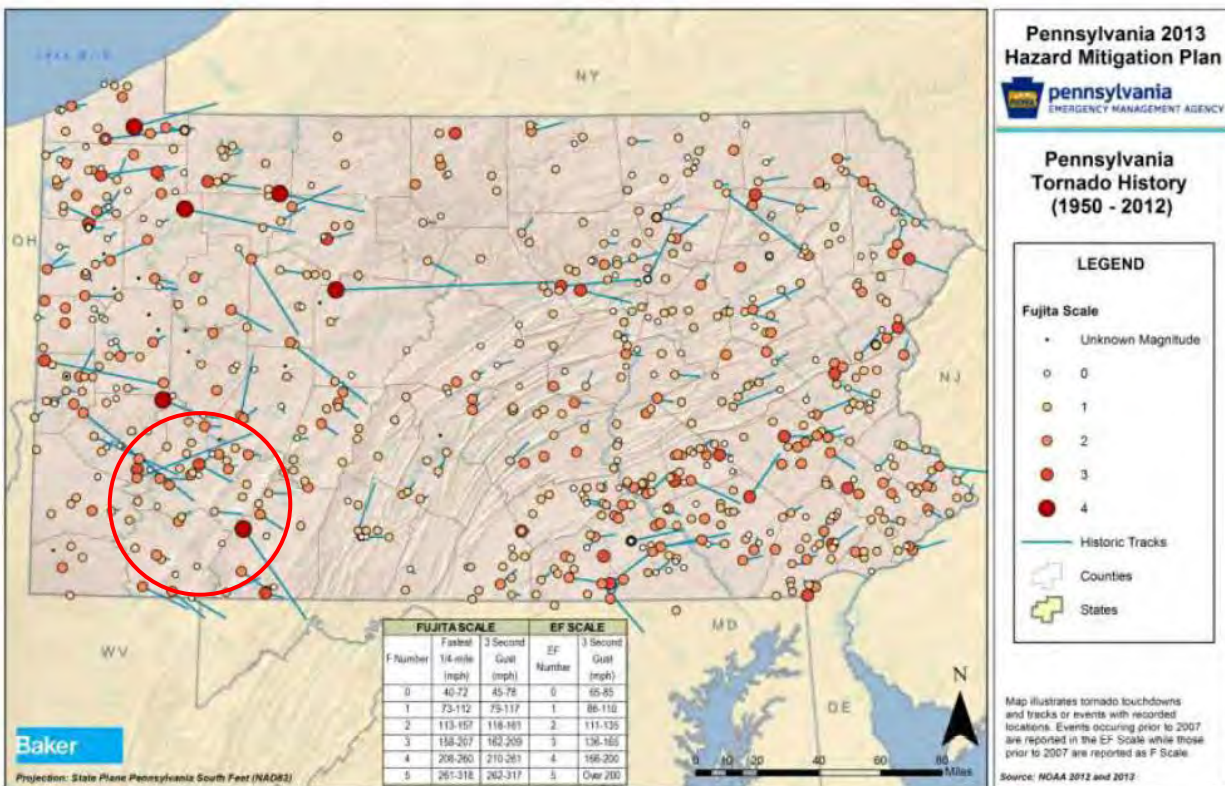
### 4.3.13.3 Past Occurrence

Many sources provided historical information regarding previous occurrences and losses associated with tornado and windstorm events throughout the Commonwealth of Pennsylvania and Westmoreland County. With so many sources reviewed for this plan, loss and impact information for many events could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP.

According to NOAA’s National Climatic Data Center (NCDC) storm events database, Westmoreland County experienced 508 tornado and windstorm events between April 30, 1950, and July 31, 2013. These events include funnel clouds, high winds, strong winds, thunderstorm winds, and tornadoes. Total property damages, as a result of these tornado and windstorm events, were estimated at \$272.9 million. This total also includes damages to other counties.

Figure 4.3.13-5 shows the tornadoes that have occurred across Pennsylvania from 1950 to 2012 (PEMA 2013).

*Figure 4.3.13-5: Pennsylvania Tornado History*



Source: PEMA 2013

Note: Westmoreland County is indicated by the red oval.

According to NOAA’s NCDC, there were 32 recorded tornadoes in Westmoreland County between 1950 and 2013. These tornadoes ranged in intensity from F0 to F4. Of the 32 tornadoes, six were categorized as F0, 16 were categorized as F1, eight were categorized as F2, one was categorized as F3, and one was categorized as F4. The most severe tornado to hit Westmoreland County was an F4 on June 3, 1980. It was 33 yards wide and left a path 7.6 miles long. No deaths or injuries were reported, but damages were approximately \$250 million (NCDC, 2013).



According to the Hazard Research Laboratory at the University of South Carolina’s Spatial Hazard Events and Losses Database for the U.S. (SHELDUS), between 1960 and 2010, 392 tornado and windstorm events occurred within Westmoreland County. The database indicated that tornado and windstorm events and losses specifically associated with Westmoreland County and its municipalities totaled approximately \$23.7 million in property damage and nearly \$1.76 million in crop damage. However, these numbers may vary because the database identifies the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2013, the Commonwealth of Pennsylvania experienced 15 federally declared windstorm or tornado-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: hurricane, tropical storm, tropical depression, severe storms, flash flooding, flooding, and high winds. Generally, these disasters cover a wide region of the State; therefore, they may have affected many counties. However, not all counties were included in the disaster declarations. Westmoreland County was included in eight of these declared (FEMA 2013). There have been four gubernatorial disaster declarations in Pennsylvania caused by tornadoes or high winds. Westmoreland County was included in one of them (PEMA, 2010).

Based on all sources researched, select significant windstorms (those with damages of at least \$100,000), and tornado events that have affected Westmoreland County and its municipalities between 1954 and 2013 are identified in Table 4.3.13-5. With tornado and windstorm documentation for the Commonwealth of Pennsylvania being so extensive, not all sources have been identified or researched. Therefore, Table 4.3.13-5 may not include all events that have occurred throughout Westmoreland County.

**Table 4.3.13-5. Tornado and Windstorm Events in Westmoreland County, 1954 to 2013**

Dates of Event	Event Type	Location	Magnitude	Losses / Impacts	Source
26-Jun-54	Tornado		F2	Path width approximately 67 yards; \$25,000 in property damages	NOAA-NCDC
8-Jul-57	Tornado		F1	Path width approximately 33 yards; \$25,000 in property damages	NOAA-NCDC
15-Jun-64	Tornado		F2	Path length 2 miles; path width approximately 800 yards. \$250,000 in property damages	NOAA-NCDC
16-Nov-65	Tornado		F2	Path width approximately 280 yards. \$250,000 in property damages	NOAA-NCDC
4-Jun-72	Lightning - Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$125,000 in property damages	SHELDUS
10-Jun-74	Tornado		F1	Path length 0.4 mile; path width approximately 130 yards.	NOAA-NCDC
30-Jun-74	Hail - Lightning - Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$416,667 in property damages; \$41,667 in crop damages	SHELDUS
26-May-75	Tornado		F1	Path length 0.8 mile; path width approximately 100 yards. No damages	NOAA-NCDC
5-Sep-75	Tornado		F1	Path length 1 mile; path width approximately 83 yards. \$2,500 in property damages	NOAA-NCDC
1-Jun-76	Tornado		F0	Path length 1.5 miles; path width approximately 33 yards. \$25,000 in property damages	NOAA-NCDC
11-Jul-76	Tornado		F3	Path length 11.8 miles; path width approximately 67 yards. \$2.5 million in property damages	NOAA-NCDC
15-Jul-76	Tornado		F1	Path length 0.5 mile; path width approximately 30 yards. \$250,000 in property damages	NOAA-NCDC
30-Mar-77	Tornado		F1	Path length 1 mile; path width approximately 400 yards. No damages	NOAA-NCDC
26-Jan-78	Wind - Winter Weather	Countywide	Unknown	\$2.6 million in property damages	SHELDUS
12-May-80	Tornado		F2	Path length 2.2 miles; path width approximately 20 yards. \$250,000 in property damages	NOAA-NCDC
3-Jun-80	Tornado		F4	Path length 7.6 miles; path width approximately 33 yards. \$250 million in property damages	NOAA-NCDC

## SECTION 4.3.13: RISK ASSESSMENT – TORNADO, WINDSTORM

Dates of Event	Event Type	Location	Magnitude	Losses / Impacts	Source
16-Jul-80	Hail - Lightning - Wind	Countywide	Unknown	\$2.6 million in property damages	SHELDUS
22-May-83	Tornado		F2	Path length 13 miles; path width approximately 200 yards. \$2.5 million in property damages	NOAA-NCDC
22-May-83	Tornado		F2	Path length 14 miles; path width approximately 200 yards. \$2.5 million in property damages	NOAA-NCDC
29-Jun-87	Tornado		F0	Path length 0.5 mile; path width approximately 20 yards. \$2,500 in property damages	NOAA-NCDC
30-Jun-87	Tornado		F0	Path length 0.5 mile; path width approximately 20 yards. \$25,000 in property damages	NOAA-NCDC
6-Sep-90	Tornado		F1	Path length approximately 0.1 mile; path 40 yards wide. No damages	NOAA-NCDC
6-Sep-90	Tornado		F1	Path length approximately 0.2 mile, path 40 yards wide. No damages	NOAA-NCDC
6-Sep-90	Tornado		F1	Path length approximately 0.2 mile, path 40 yards wide. No damages	NOAA-NCDC
9-Apr-91	Tornado		F1	Path length approximately 0.2 mile, path 50 yards wide. \$25,000 in property damages	NOAA-NCDC
24-Jul-92	Tornado		F1	Path length 1.5 miles; path width approximately 50 yards. \$25,000 in property damages	NOAA-NCDC
5-Jul-94	Tornado	Jeannette	F1	A tornado downed large trees from Jeannette to Greensburg, closing State Route 30. An apartment roof was blown off at Greensburg, leaving eight families homeless. Other buildings sustained minor damage. Path length 1 mile; path width approximately 50 yards. \$500,000 in property damages.	NOAA-NCDC
15-Aug-97	Tornado	Derry	EF1	A severe thunderstorm produced a tornado that produced substantial damage in a residential area east-northeast of Latrobe along the foothills of the Chestnut Ridge. The tornado first touched down 1 mile west of Derry. Path length 3.5 miles; path width 200 yards. \$800,000 in property damages.	NOAA-NCDC
2-Jun-98	Tornado	Irwin	F0	A weak F0 tornado briefly touched down for approximately 5 minutes over extreme eastern Allegheny and western Westmoreland Counties. One roof was blown off a structure. Otherwise, damage from this tornado was limited to downed trees. Path length 0.7 mile; path width approximately 50 yards. \$15,000 in property damages.	NOAA-NCDC

## SECTION 4.3.13: RISK ASSESSMENT – TORNADO, WINDSTORM

Dates of Event	Event Type	Location	Magnitude	Losses / Impacts	Source
2-Jun-98	Tornado	Irwin	F1	An F1 tornado crossed over the Pennsylvania Turnpike one mile west of Exit 9 at Donegal. As it crossed the turnpike, it tipped over an eastbound tractor trailer, injuring the driver. One mobile home was overturned. Otherwise, only minor structural damages occurred. Path length 8 miles; path width approximately 200 yards. \$200,000 in property damages.	NOAA-NCDC
2-Jun-98	Tornado	Donegal	F1	An F1 tornado touched down 5 miles northwest of Carnegie in Allegheny County and moved east-southeast across the southern and eastern suburbs of Pittsburgh into Westmoreland County. The total path length of this tornado was estimated to be 32 miles, with 6 miles in Westmoreland County. It was 300 yards wide. No property damages.	NOAA-NCDC
16-Jun-98	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$105,000 in property damages	SHELDUS
16-Jun-98	Tornado	Bagdad	F0	A weak F0 tornado damaged shingles on one house and snapped/uprooted 30 to 40 trees. \$10,000 in property damages.	NOAA-NCDC
30-Jun-98	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$1.1 million in property damages	SHELDUS
30-Jun-98	Thunderstorm Winds	Countywide	0	Thunderstorm winds downed numerous trees and power lines. Major damage was reported to around ten homes, with numerous other homes in the area receiving minor damage. A new concrete block was at a car dealership was knocked over. \$1 million in property damages.	NOAA-NCDC
12-May-02	Thunderstorm Winds	Countywide	65	A thunderstorm microburst passed across Westmoreland County, leaving a path of damage along its entire route. The greatest amount of damage occurred in the Irwin and North Huntingdon areas. However, damage also occurred in Jeanette, Greensburg, and Latrobe, and Derry. Tree fell on car, injuring the driver and one passenger, killing the other passenger. \$100,000 in property damages.	NOAA-NCDC
12-May-02	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$100,000 in property damages	SHELDUS
26-Jul-02	Thunderstorm Winds	Murrysville	0	Microburst hit portions of eastern Murrysville. The length of the damage path was about one quarter of a mile. The width was approximately 200 yards. The strongest winds were estimated to be about 80 mph. 1 injury. \$200,000 in property damages.	NOAA-NCDC
26-Jul-02	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$200,000 in property damages	SHELDUS

## SECTION 4.3.13: RISK ASSESSMENT – TORNADO, WINDSTORM

Dates of Event	Event Type	Location	Magnitude	Losses / Impacts	Source
4-Aug-04	Tornado	Greensburg	F0	An F-0 tornado touched down at Charter Oak, 3 miles east of Greensburg, in Unity Twp. It moved toward the southeast, uprooting several large trees, which crushed fencing at a nearby swimming pool. Path length 100 yards, path wide 30 yards, maximum wind 65 mph. \$1,000 in property damages.	NOAA-NCDC
1-Dec-06	Tornado	Greensburg	F1	A weak F1 tornado touched down in Greensburg at 11:40 a.m. about one quarter mile south of Greensburg Hospital. The tornado was only briefly on the ground for about 100 yards in Greensburg with F1 damage to trees, one house, and an automobile. \$75,000 in property damages.	NOAA-NCDC
28-Jun-08	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$125,000 in property damages	SHELDUS
28-Jun-08	Thunderstorm Winds	Export	50	\$125,000 in property damages; trees and power lines down	NOAA-NCDC
29-Jun-08	THUNDERSTORM WINDS	Derry; South Greensburg	50	One large tree fell on a moving vehicle driven by a 37-year-old male. \$150,000 in property damages.	NOAA-NCDC
29-Jun-08	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$150,000 in property damages	SHELDUS
12-Feb-09	Wind	Countywide	Unknown	\$113,000 in property damages	SHELDUS
20-Apr-09	Wind	Countywide	Unknown	\$100,000 in property damages	SHELDUS
9-Dec-09	Wind	Countywide	Unknown	\$107,000 in property damages	SHELDUS
16-Apr-10	Thunderstorm Winds	Countywide	60	Severe thunderstorms were scattered across eastern Ohio, the northern West Virginia panhandle, and southwest Pennsylvania ahead of a cold front. \$200,000 in property damages.	NOAA-NCDC
16-Apr-10	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$100,000 in property damages	SHELDUS
16-Apr-10	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$200,000 in property damages	SHELDUS
23-Mar-11	Tornado	Rillton	EF2	As a low pressure system tracked along a warm front across Ohio and Pennsylvania severe thunderstorms developed just south of the front in Ohio and progressed eastward. Large hail was reported with many of the storms. Path length 9 miles; path width approximately 300 yards. \$4 million in property damages including high school building and athletic facility.	NOAA-NCDC

Dates of Event	Event Type	Location	Magnitude	Losses / Impacts	Source
16-Apr-11	Wind	Countywide	Unknown	\$100,000 in property damages	SHELDUS
19-Aug-11	Thunderstorm Winds	Monessen, Fellsburg, New Kensington, Wyano	50	\$100,000 in property damages	NOAA-NCDC
19-Aug-11	Severe Storm/Thunder Storm - Wind	Countywide	Unknown	\$100,000 in property damages	SHELDUS
1-Jun-12	Tornado	Oak Grove	EF1	A strong squall line associated with a cold front crossed through western Pennsylvania in the afternoon on the 1st. Significant damage to a camp and conference center. Path length 5 miles; path width approximately 300 yards. \$3 million in property damages; 9 million in total damage; 6 million was from a church camp that was self-insured	NOAA-NCDC; Westmoreland County HMWG

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

FEMA Federal Emergency Management Agency

K Thousand (\$)

KTS Knots

M Million (\$)

NOAA National Oceanic Atmospheric Administration

PEMA Pennsylvania Emergency Management Agency

SR State Route

HMWG Hazard Mitigation Working Group



#### 4.3.13.4 Future Occurrence

In Section 4.4, the hazards of concern identified for Westmoreland County were ranked according to relative risk. The probability of occurrence, or likelihood of the event, is one parameter used for ranking hazards. The probability of occurrence for severe tornado and windstorm events in Westmoreland County is considered *likely* (between 10 and 100 percent annual probability) as defined by the Risk Factor Methodology probability criteria (Section 4.4).

Westmoreland County experiences strong winds on a frequent basis, and when those winds do strike, they can result in significant property damage, downed trees, and utility outages. It can reasonably be assumed future tornadoes will be similar in nature to those that have affected Westmoreland County in the past. It is estimated that Westmoreland County will continue to experience direct and indirect impacts of windstorms and tornadoes annually that may induce secondary hazards such as infrastructure deterioration or failure, utility failures, power outages, water quality and supply concerns, and transportation delays, accidents and inconveniences.

#### 4.3.13.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the hazard area identified. The entire Westmoreland County has been identified as the hazard area for tornado and windstorm events. Therefore, all assets in the County (population, structures, critical facilities, and lifelines), as described in the County Profile (Section 2), are vulnerable. The following text evaluates and estimates the potential impact of the wind hazard on the County, including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact on (1) life, health and safety of residents, (2) general building stock, (3) critical facilities, (4) economy, (5) environment, and (6) future growth and development
- Effect of climate change on vulnerability
- Further data collection that will assist understanding this hazard over time.

##### 4.3.13.5.1 Overview of Vulnerability

The high winds and air speeds of a tornado and windstorm often result in power outages, disruptions to transportation corridors and equipment, loss of workplace access, significant property damage, injuries and loss of life, and the need to shelter and care for individuals affected by the events. A large amount of damage can be inflicted by trees, branches, and other objects that fall onto power lines, buildings, roads, vehicles, and, in some cases, people.

As a result of Westmoreland County's inland location, losses from wind are primarily associated with severe thunderstorm and tornadoes. Secondary flooding associated with the torrential downpours during severe storms is also a primary concern in the County (see flood discussion in Section 4.3.5).

##### 4.3.13.5.2 Data and Methodology

A probabilistic analysis was conducted using HAZUS-MH to assess the wind hazard. HAZUS estimates the 100-year Mean Return Period (MRP) wind speeds for Westmoreland County to be less than 50 mph and estimates the 500-year MRP wind speeds for the County to range from 57 to 69 mph. These wind speeds are considered strong and potentially dangerous and damaging.

The entire inventory of Westmoreland County is at risk of being damaged or lost by the impacts of severe windstorms and tornadoes. Certain areas, infrastructure, and types of building are at greater risk than others because of their proximity to falling hazards and manner of construction. Potential losses associated with high wind events were calculated for the County for these two probabilistic wind events: the 100-year and 500-year MRP wind events. The impacts on population, existing structures and critical facilities on Westmoreland County are presented below. The following discusses the County's vulnerability to the tornado and windstorm hazard in a qualitative nature.

#### 4.3.13.5.3 Impact on Life, Health and Safety

The impact of a tornado or windstorm event on life, health, and safety depends on several factors, including the severity of the event and whether adequate warning time was provided to residents. It is assumed that the entire Westmoreland County population is exposed to this storm hazard.

Unfortunately, some tornadoes strike with little or no warning and residents must act quickly. The following populations are more vulnerable to a tornado or other type of wind event: (1) population located in communities without, or have ineffective, early warning systems; (2) population with functional needs or over the age of 65 because they may have more difficulty evacuating or seeking shelter; (3) economically disadvantaged populations because they are likely to evaluate their risk and make decisions based on the major economic impact to their family and may not have funds to evacuate; (4) population with a language barrier unable to follow warning messages; (5) population in mobile homes; and (6) population in automobiles at the time of a tornado. The elderly and functional needs populations are considered most vulnerable because they require extra time or outside assistance to seek shelter and are more likely to seek or need medical attention, which may not be available as a result of isolation during and after an event.

Residents may be displaced or require temporary to long-term sheltering. In addition, downed trees, damaged buildings, and debris carried by high winds can lead to injury or loss of life. Socially vulnerable populations are most susceptible, based on a number of factors including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing.

#### 4.3.13.5.4 Impact on General Building Stock and Critical Facilities

Damage to buildings depends on several factors including wind speed, storm duration, path of the storm track or tornado, distance from the tornado funnel, and building construction. Because of differences in building construction, residential structures are generally more susceptible to wind damage than are commercial and industrial structures. Wood and masonry buildings in general, regardless of their occupancy class, tend to experience more damage than concrete or steel buildings. High-rise buildings are also very vulnerable structures. Mobile homes are the most vulnerable to damage, even if tied down, and offer little protection to people inside.

Impacts to transportation lifelines affect both short-term (such as evacuation activities) and long-term (for example, day-to-day commuting) transportation needs. Utility structures could suffer damage associated with high wind, falling tree limbs, or other debris. These impacts can result in the loss of power, which can affect business operations and can impair the provision of heating or cooling to citizens (including the young and elderly, who are particularly vulnerable to temperature-related health impacts).

#### 4.3.13.5.5 Impact on the Economy

Tornadoes and windstorms also affect the economy, including loss of business function (tourism and recreation), damage to inventory, relocation costs, wage loss and rental loss caused by the repair or replacement of buildings. Recovery and cleanup costs can also be costly and affect the economy as well.

#### 4.3.13.5.6 Impact on the Environment

Tornado events are typically localized; therefore, environmental impacts are rarely widespread. The impacts of windstorms on the environment usually take place over a larger area. Severe damage to plant species is likely with both tornado and windstorm events. This damage includes uprooting or destruction of trees and increased threat of wildfire in areas of tree debris.

#### 4.3.13.5.7 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across Westmoreland County at the municipal level. Refer to Section 4.4 of this HMP. Any areas of growth could be affected by the wind hazard because the entire region is exposed and vulnerable to the wind hazard associated with tornadoes and windstorms.

#### 4.3.13.5.8 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and at the local scale, climate change has the potential to alter the prevalence and severity of extremes such as storms, including those that may bring precipitation, high winds and tornado events. While predicting changes of wind and tornado events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society and the environment (U.S. Environmental Protection Agency [EPA] 2006).

Since the 1970s, globally there has been an increase in tropical cyclone destructiveness as measured by the Power Dissipation Index. This increased tropical cyclone intensity and duration correlate with sea surface temperature and suggests that future increases of tropical sea surface temperature may lead to future increases in tropical cyclone intensity and duration. However, there is a high level of uncertainty regarding the relationship between climate change and storm events. Future improvements in modeling smaller-scale climatic processes can be expected and will lead to improved understanding of how the changing climate will alter temperature, precipitation and storms events in Pennsylvania (Shortle and others 2009).

#### 4.3.13.5.9 Additional Data and Next Steps

In time, HAZUS-MH will be released with modules that address straight-line wind and tornado events for the interior U.S. As updated versions of HAZUS-MH are released, Westmoreland County can run analysis for an overall picture of the wind damages and debris generated from these tornado events.

Over time, the County will obtain additional data to support the analysis of this hazard. Data that will support the analysis would include additional detail on past hazard events and impacts and an updated building inventory to include specific building information such as type of construction and details on protective features (for example, shutters).

### 4.3.14 Winter Storm

This section provides a profile and vulnerability assessment for the winter storm hazard for Westmoreland County. Winter storms occur, on average, approximately five times each year in Pennsylvania. From November through March, the State is exposed to winter storms that move up the Atlantic coast or sweep in from the west. Every county in the Commonwealth is subject to severe winter storms; however, the northern tier, western counties, and mountainous regions tend to experience winter weather more frequently and with greater severity.

Winter storms have the potential to produce more damage than any other severe weather event, including tornadoes. Complications caused by winter storms have the potential to lead to road closures, especially secondary and farm roads; business losses to commercial centers built in outlying areas because of supply interruption and loss of customers; property losses and roof damages from snow and ice loading and fallen trees; utility interruptions; and loss of water supplies. Flooding can result from winter storm events as well.

Most severe winter storm hazards include heavy snow (snowstorms), blizzards, sleet or freezing rain, ice storms and Nor'easters. Because most extra-tropical cyclones (mid-Atlantic cyclones locally known as Northeasters or Nor'easters) generally take place during the winter weather months, these hazards have also been grouped as a type of severe winter weather storm. Types of severe winter weather events or conditions are further defined below:

- **Heavy Snow:** According to the National Weather Service (NWS), heavy snow is generally considered to be snowfall accumulating to 4 inches or more in depth in 12 hours or less; or snowfall accumulating to 6 inches or more in depth in 24 hours or less. A snow squall is an intense but limited-duration period of moderate to heavy snowfall, also known as a snowstorm, accompanied by strong, gusty surface winds and possibly lightning (generally moderate to heavy snow showers) (NWS 2009). Snowstorms are complex phenomena involving heavy snow and winds, whose impact can be affected by a great many factors, including a region's climatological susceptibility to snowstorms, snowfall amounts, snowfall rates, wind speeds, temperatures, visibility, storm duration, topography, and occurrence during the course of the day, weekday versus weekend, and time of season (Kocin and Uccellini 2013).
- **Blizzard:** Blizzards are characterized by low temperatures, wind gusts of 35 miles per hour (mph) or more, and falling and/or blowing snow that reduces visibility to 0.25 mile or less for an extended period of time (3 or more hours) (NWS 2009). A severe blizzard is defined as having a wind velocity of 45 mph, temperatures of 10°F or lower, and a high density of blowing snow with visibility frequently measured in feet over an extended period of time.
- **Sleet or Freezing Rain:** Sleet is defined as pellets of ice composed of frozen or mostly frozen raindrops or refrozen, partially-melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Freezing rain is rain that falls as a liquid but freezes into glaze upon contact with the ground. Both types of precipitation, even in small accumulations, can cause significant hazards to a community (NWS 2009).
- **Ice storm:** An ice storm is described as an occasion when damaging volumes of ice are expected to accumulate during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and means of communication. These accumulations of ice make walking and driving extremely dangerous, and can create extreme hazards to motorists and pedestrians (NWS 2009).

- Nor'easter (abbreviation for Northeaster): Nor'easters are named for the strong northeasterly winds that blow in from the Atlantic Ocean ahead of the storm and over coastal areas. They are also referred to as a type of extra-tropical cyclone (mid-latitude storms, or Great Lake storms). A Nor'easter is a macro-scale, extra-tropical storm whose winds come from the northeast, especially in the coastal areas of the northeastern United States and Atlantic Canada. Wind gusts associated with Nor'easters can exceed hurricane forces in intensity. Unlike tropical cyclones that form in the tropics and have warm cores (including tropical depressions, tropical storms, and hurricanes), Nor'easters contain a cold core of low barometric pressure that forms in the mid-latitudes. Their strongest winds are close to the earth's surface and often measure several hundred miles across. Nor'easters may occur at any time of the year but are more common during fall and winter months (September through April) (NYCOEM Date Unknown).

Nor'easters can cause heavy snow, rain, gale force winds and oversized waves (storm surge) that can cause beach erosion, coastal flooding, structural damage, power outages and unsafe human conditions. If a Nor'easter cyclone stays just offshore, the results are much more devastating than if the cyclone travels up the coast on an inland track. Nor'easters that stay inland are generally weaker and usually cause strong winds and rain. Those that stay offshore can bring heavy snow, blizzards, ice, strong winds, high waves, and severe beach erosion. In these storms, the warmer air is aloft. Precipitation falling from this warm air moves into the colder air at the surface, causing crippling sleet or freezing rain (McNoldy Multi-Community Environmental Storm Observatory [MESO] Date Unknown). While some of the most devastating effects of Nor'easters are experienced in coastal areas (e.g. beach erosion, coastal flooding), the effects on inland areas, like Westmoreland County, may include heavy snow, strong winds, and blizzards.

#### 4.3.14.1 Location and Extent

Winter storms are regional events, with most events impacting a large area or the entire Commonwealth. In many cases, surrounding states and even the northeast region of the United States are affected by a single winter storm event.

The magnitude or severity of a severe winter storm depends on several factors including a region's climatological susceptibility to snowstorms, snowfall amounts, snowfall rates, wind speeds, temperatures, visibility, storm duration, topography, time of occurrence during the day (e.g., weekday versus weekend), and time of season.

The extent of a severe winter storm can be classified by meteorological measurements and by evaluating its societal impacts. National Oceanic and Atmospheric Administration (NOAA)'s National Climatic Data Center (NCDC) is currently producing the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two-thirds of the United States. The RSI ranks snowstorm impacts on a scale from 1 to 5. The index is based on the spatial extent of the storm, the amount of snowfall, and the interaction of the extent and snowfall totals with population (based on the 2000 Census). The NCDC has analyzed and assigned RSI values to over 500 storms since 1900 (NOAA-NCDC 2011). Table 4.3.14-1 presents the five RSI ranking categories.

All of Westmoreland County is susceptible to winter storms. Based on annual snowfall averages according to the 2013 State HMP (Figure 4.3.14-1), the eastern portion of Westmoreland County (50-60 inches average) would most likely experience increased snowfall accumulation during a winter storm event than the central (40-50 inches average) or western (30-40 inches average) portions. In addition, NWS has recently delineated the "Eastern Ridges" as a separate weather warning area. Advisories are given specifically for this region so travelers and residents may be cognizant of the unique and more susceptible weather area. Figure 4.3.14-2 delineates the Laurel Ridge Warning Area as defined by NWS.

**Table 4.3.14-1. RSI Ranking Categories**

Category	Description	RSI Value
1	Notable	1-3
2	Significant	3-6
3	Major	6-10
4	Crippling	10-18
5	Extreme	18.0+

Source: NOAA-NCDC 2011

Note: RSI = Regional Snowfall Index

#### 4.3.14.2 Range in Magnitude

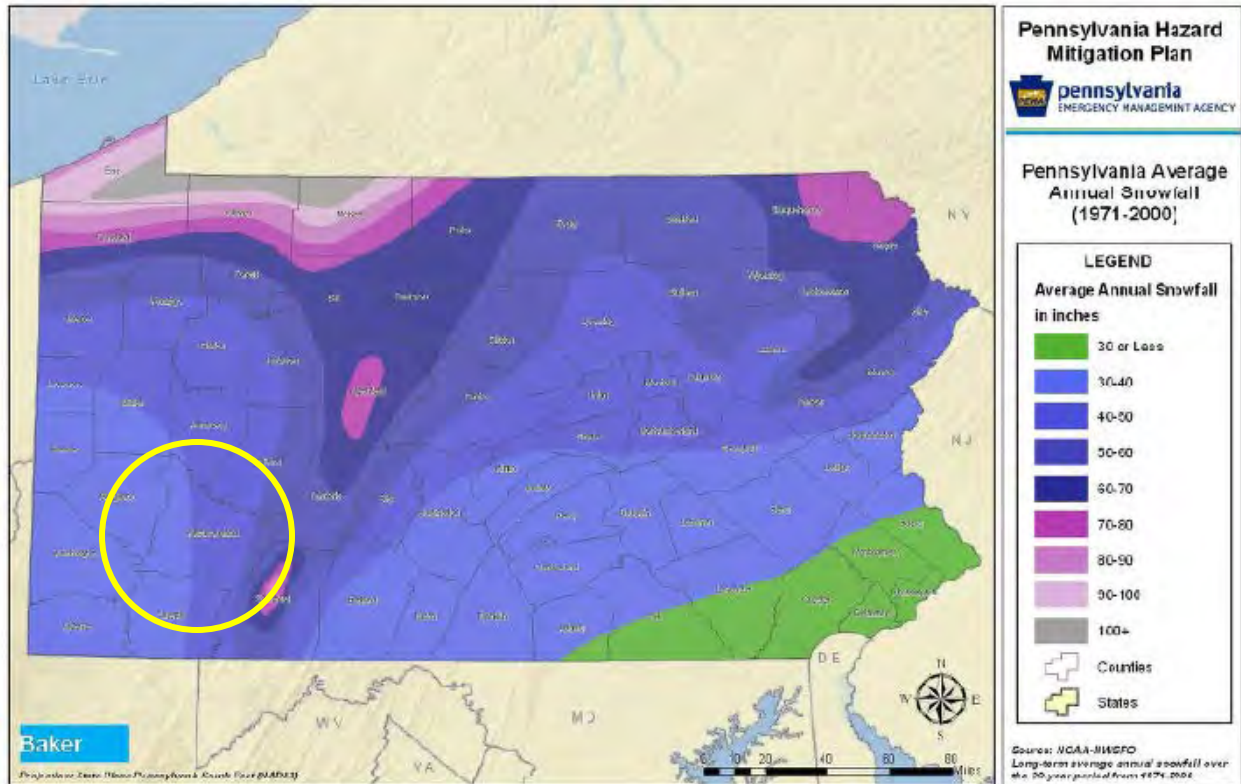
A winter storm can adversely affect roadways, utilities, and businesses, and can cause loss of life, frostbite, and freezing conditions. These storms typically fall into one of the following categories, which have been defined in the previous section:

- Heavy snow
- Sleet or freezing rain
- Ice storm
- Blizzard
- Nor'easter

Portions of Westmoreland County receive 30-60 inches of snow each year, as shown in Figure 4.3.14-1. The worst winter storms to strike Westmoreland County occurred January 1994. Within the region on January 4, 1994, there were 10 deaths from heart attacks and 185 injuries from people falling on ice and vehicle accidents. Damages exceeded \$5 million. Another storm hit Pennsylvania on January 17, dropping 8 inches of snow at Latrobe and causing another \$500,000 in damages.

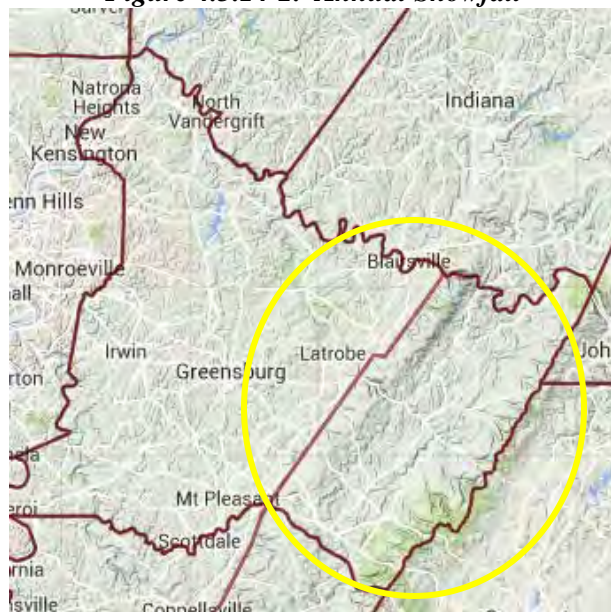


**Figure 4.3.14-1. Annual Snowfall**



Source: Pennsylvania Emergency Management Agency (PEMA) 2013  
 Note: Highlight added. The yellow oval indicates the location of Westmoreland County.

**Figure 4.3.14-2. Annual Snowfall**



Source: National Weather Service (NWS) 2014  
 Note: Highlight added. The yellow oval indicates the location of Eastern Ridge.

### 4.3.14.3 Past Occurrence

Many sources provided historical information regarding previous occurrences and losses associated with winter storm events throughout the Commonwealth of Pennsylvania and Westmoreland County. With so many sources reviewed for the purpose of this Plan, loss and impact information for many events could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this Plan.

According to the NOAA-NCDC storm events database, Westmoreland County experienced 64 winter storm events between 1950 and October 31, 2013. Total property damages resulting from these winter storm events were estimated at \$15.9 million. This total also includes damages to other counties.

According to the Hazard Research Lab at the University of South Carolina's Spatial Hazard Events and Losses Database for the U.S. (SHELDUS), between 1960 and 2010, 51 winter storm events occurred within the county. Losses totaled over \$5.9 million in property damage and approximately \$2,650 in crop damage. However, these numbers may vary; the database identified the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2013, the Federal Emergency Management Agency (FEMA) declared that the Commonwealth of Pennsylvania experienced six winter storm-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: severe winter storms, snowstorms, blizzard, winter storm, severe storm, and snowfall. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations. Of those events, PEMA and other sources indicate that Westmoreland County has been declared as a disaster area as a result of all of the six winter storm events (FEMA 2012).

Based on all sources researched, known winter storm events that have affected Westmoreland County (and resulted in injuries, fatalities, and/or damages) are identified in Table 4.3.14-2. Because winter storm documentation for the State of Pennsylvania is so extensive, not all sources have been identified or researched. Therefore, Table 4.3.14-2 may not include all events that have occurred throughout the County. However, several of these storms are described below Table 4.3.14-2.

**Table 4.3.14-2. Winter Storm Events in Westmoreland County, 1950 and 2013**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
January 29, 1977	Snowstorms	EM-3026	No	No information available	FEMA
March 13-17, 1993	Severe Snowfall and Winter Storm (also identified as a blizzard)	EM-3105	Yes	One of the biggest snowstorms this century struck western and central Pennsylvania. Blizzard conditions were met for much of the late afternoon and evening hours of March 13. Total snowfall ranged from 10 to 36 inches, with drifts of 6 to 10 feet. 36 inches of snow fell at Latrobe. A snow emergency was declared to allow for snow removal. The National Guard was called into the County to aid with emergency operations. It took some areas of the County up to 2 weeks to get snow cleared off of their roads. Two fatalities were attributed to the storm, which also did over \$5 million in damages.	NOAA-NCDC, FEMA
January – February 1994	Winter Storm, Severe Storm	DR-1015	Yes	<p>January 4 - A major east coast winter storm left a track of heavy snow from the southern Appalachians into New England. On the January 6, Governor Casey declared a State of Emergency for Fayette, Greene, Washington, and Westmoreland Counties. According to a Pittsburgh newspaper, there were approximately 10 deaths due to heart attacks and 185 injuries from people falling on ice and vehicle accidents. The storm did over \$5 million in damages.</p> <p>January 17 - A fast-moving storm system moved from Texas to Virginia, dumping heavy amounts of snow across southern Pennsylvania. 8 inches of snow fell at Latrobe. This snowfall in combination with the snowfall earlier in the month led to building collapses. In Westmoreland County when, the roof of the Parker-Daedal Inc. building failed. Storm damages reached \$500,000.</p>	NOAA-NCDC, FEMA
March 2-3, 1994	Heavy Snow, Blizzard, Avalanche	N/A	N/A	A major east coast winter storm moved northeast along the Mid Atlantic Coast. Heavy snow fell from West Virginia northward into New England. Snowfall across Pennsylvania ranged from 6 inches in the far western counties, to as much as two feet in the central mountains. Over \$5 million in damages were reported, along with 1 injury.	NOAA-NCDC
November 14, 1995	Heavy Snow	N/A	N/A	The snow was very wet and heavy. Several limbs and trees fell under the weight of the snow and numerous power lines were also downed. Heavy snowfall totals throughout the region included 12-24 inches in Westmoreland County. Property damages were estimated at \$20,000.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
January 6-12, 1996	Blizzard of 1996	DR-1085	Yes	Westmoreland County received 14-18 inches of snow; most areas received approximately 10 inches less snow than in the March 1993 storm. Three people died from cardiac arrest associated with the storm.	NOAA-NCDC, FEMA
November 13-14, 1997	Ice Storm	N/A	N/A	Up to 2 inches of a mixture of sleet and freezing rain fell. Several trees, large branches, and power lines were downed throughout western Pennsylvania. Property damages were estimated at \$41,000.	NOAA-NCDC
January 2-3, 1999	Winter Storm	N/A	N/A	A strong winter storm approached the region from the south central United States, bringing a mix of snow, sleet, and freezing rain to western Pennsylvania. Across southwest Pennsylvania, between 1 and 3 inches of snow fell before the precipitation turned to freezing rain. Ice accumulations of between 0.25 and 0.5 inch were reported across the majority of the area. In Latrobe, Westmoreland County, winds blew a section of roof off of the American Legion building. Two fatalities, one injury, and \$250,000 in damages were reported.	NOAA-NCDC
January 14, 1999	Winter Storm	N/A	N/A	20 municipalities and the County declared disaster emergencies. The accumulating ice caused power lines to snap and toppled trees around the County. About 2,000 people were without power in Jeanette and Latrobe, and a number of roads were closed throughout the day.	
March 3-4, 1999	Winter Storm	N/A	N/A	A deepening area of low pressure moved across northern West Virginia and into central Pennsylvania, spreading snowfall totals of between 2 and 5 inches across much of western Pennsylvania, with higher snowfall totals reported across the western slopes of the Laurel Highlands. Champion, in the highlands of eastern Westmoreland County, reported a total of 16 inches from the storm. Elsewhere in Westmoreland County, 10 inches fell in Greensburg, 9 inches in New Stanton, and 8 inches in both Derry and Rector. To compound problems, high winds gusting to over 60 mph during the early morning hours of March 4 downed numerous trees and disrupted power across portions of Fayette, Indiana, and Westmoreland Counties. Damages were estimated at \$50,000.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
March 9, 1999	Heavy Snow	N/A	N/A	A winter storm moved quickly across the Ohio Valley, producing snowfall totals of between 4 and 10 inches across southwest Pennsylvania. Snowfall amounts included around 10 inches of new snow on the higher ridges of eastern Westmoreland County. The snowfall and icy roads were responsible for numerous accidents on roadways across southwest Pennsylvania. Most accidents were of the fender-bender kind, but one collision in eastern Washington County sent two people to the hospital with minor injuries.	NOAA-NCDC
December 11, 2002	Ice Storm	N/A	N/A	0.25 inch of ice accumulation	NOAA-NCDC
February 17, 2003	Winter Storm	EM-3180	Yes	Significant snow fell in the western part of the County and significant ice accumulated in the eastern mountains. 20 inches of snow fell in Laurel Mountain; 40 inches fell in Champion. Four municipalities declared disaster emergencies. There were three fatalities in the County.	NOAA-NCDC, FEMA
February 3, 2004	Ice Storm	N/A	N/A	An ice storm began after 9:00 p.m. on February 2 and continued overnight. By 7:00 a.m. on February 3, most places had a glaze of ice 0.25-inch thick. Property damages were estimated at \$10,000.	NOAA-NCDC
February 1, 2008	Winter Storm	N/A	N/A	Ice accumulations ranged from 0.25 to nearly 0.5 inch. Travel was hazardous across the region and some trees and power lines were reported down. Damage was estimated at \$10,000.	NOAA-NCDC
February 12, 2008	Winter Storm	N/A	N/A	Snowfall of 4 to 6 inches was common with ice accumulation from freezing rain over 0.1 inch, as well as light sleet accumulations.	NOAA-NCDC
February 29, 2008	Heavy Snow	N/A	N/A	Snowfall amounts were generally 6 to 8 inches in 12 hours.	NOAA-NCDC
October 28, 2008	Winter Weather	N/A	N/A	Snowfall amounts were 6 to 8 inches in 36 hours across the lake-effect counties and ridges of Pennsylvania.	NOAA-NCDC
January 27, 2009	Winter Storm	N/A	N/A	Snowfall amounts were 3 to 6 inches with 0.25 to 0.5 inch of ice accumulation.	NOAA-NCDC
December 8, 2009	Ice Storm	N/A	N/A	Ice accumulated from 0.25 to 0.5 inch.	NOAA-NCDC

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
December 13, 2009	Winter Weather	N/A	N/A	Freezing rain quickly accumulated on untreated roadways up to 0.1 inch of ice. Thousands of minor vehicle accidents occurred throughout the region. One fatality was reported in Westmoreland County.	NOAA-NCDC
December 18, 2009	Heavy Snow	N/A	N/A	6 to 12 inches of snow	NOAA-NCDC
December 25, 2009	Ice Storm	N/A	N/A	Ice accumulations ranged from 0.25 to 0.5 inch.	NOAA-NCDC
February 5-11, 2010	Snow	DR-1898	Yes	2 feet of snow fell in the ridges of Westmoreland County. Snow was wet and heavy, bringing down trees and power lines with around 200,000 people without power at some point after the storm. Roads were not passable for 2 to 3 days in some locations, and power was not restored to some homes until 3 days after the storm.	FEMA, NOAA-NCDC
February 15, 2010	Heavy Snow			6 to 10 inches in the ridges of Westmoreland	NOAA-NCDC
February 25, 2010	Heavy Snow			Heavy snow fell in western Pennsylvania with storm totals of 12 to 36 inches.	NOAA-NCDC
January 31-February 1, 2011	Ice Storm			Accumulations on February 1 ranged from 0.25 to more than 0.5 inch.	NOAA-NCDC
February 21, 2011	Heavy Snow			Snowfall rates up to 2 inches per hour produced storm totals of 6 to 10 inches across the region.	NOAA-NCDC
January 20, 2012	Ice Storm			Freezing rain accumulations from 0.25 to over 0.5 inch.	NOAA-NCDC
December 26, 2012	Ice Storm			Up to 0.5 inch of ice	NOAA-NCDC
March 5-6, 2013	Heavy Snow			Snowfall in the ridges of Westmoreland County received anywhere from 6 to 12 inches of snow in 12 hours. A heavier band of snow brought accumulations from 8 to 12 inches across other portions of the County.	NOAA-NCDC

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

DR	Federal Disaster Declaration	NCDC	National Climate Data Center
EM	Federal Emergency Declaration	NOAA	National Oceanic Atmospheric Administration
FEMA	Federal Emergency Management Agency	PEMA	Pennsylvania Emergency Management Agency
N/A	Not applicable/available		





#### 4.3.14.4 Future Occurrence

Given the history of winter storm events that have impacted Westmoreland County, it is apparent that future winter storm events of varying degrees will continue to occur. Because the elements required for winter storms exist, and major events have occurred throughout Westmoreland County in the past, evidence suggests that many people and properties are at risk from the winter storm hazard in the future.

Based on available historical data, the future occurrence of winter storm events can be considered likely as defined by the Risk Factor Methodology probability criteria (further discussed in Section 4.4).

#### 4.3.14.5 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the identified hazard area. For winter storm events, all of Westmoreland County has been identified as the hazard area. Therefore, all assets (population, structures, critical facilities and lifelines), as described in the County Profile (Section 2), are vulnerable. The following section includes an evaluation and estimation of the potential impact winter storm events have on the County including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on life, health, and safety; general building stock; critical facilities; economy; environment; and future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist understanding this hazard over time

##### 4.3.14.5.1 Overview of Vulnerability

Winter storms are a concern based on the frequency in which Westmoreland County is affected by winter storms. Additionally, winter storms are of significant concern because of the direct and indirect costs associated with these events, delays caused by the storms, and impacts on the people and facilities of the region.

##### 4.3.14.5.2 Data and Methodology

National weather databases, the 2013 Pennsylvania Hazard Mitigation Plan (HMP) and local resources were used to collect and analyze severe winter storm impacts on Westmoreland County. The 2010 U.S. Census data and the custom building inventory for Westmoreland County was used to support an evaluation of assets exposed to this hazard and the potential impacts associated with this hazard.

##### 4.3.14.5.3 Impact on Life, Health, and Safety

According to the NOAA National Severe Storms Laboratory (NSSL), every year winter weather indirectly and deceptively kills hundreds of people in the United States, primarily from automobile accidents, overexertion, and exposure. Winter storms are often accompanied by strong winds creating blizzard conditions with blinding wind-driven snow, drifting snow, extreme cold temperatures, and dangerous wind chill. Winter storms are considered deceptive killers because most deaths and other impacts or losses are indirectly related to the storm. People can die in traffic accidents on icy roads, of heart attacks while shoveling snow, or of hypothermia from prolonged exposure to cold.

Heavy snow can immobilize a region and paralyze a city, shutting down air and rail transportation, stopping the flow of supplies, and disrupting medical and emergency services. Accumulations of snow can collapse buildings and knock down trees and power lines. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. Storms near the coast can cause coastal flooding and beach erosion as well as sink ships at sea. In the mountains, heavy snow can lead to avalanches (NSSL 2006).

Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days while utility companies work to repair the extensive damage. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians. Bridges and overpasses are particularly dangerous because they freeze before other surfaces (NSSL 2006).

For the purposes of this Plan, the entire population of Westmoreland County is considered exposed to winter storm events (U.S. Census 2010). The elderly are considered most susceptible to this hazard because of their increased risk of injuries and death from falls and overexertion and/or hypothermia from exposure while attempting to clear snow and ice. In addition, winter storm events can reduce the ability of these populations to access emergency services. Residents with low incomes may not have access to housing, or their housing may be less able to withstand cold temperatures (e.g., homes with poor insulation and heating supply). The County Profile (Section 2) of this Plan provides population statistics for each participating municipality and a summary of the more vulnerable populations (over the age of 65 and individuals living below the U.S. Census poverty threshold).

#### 4.3.14.5.4 Impact on General Building Stock

The entire general building stock inventory in Westmoreland County is exposed and vulnerable to the winter storm hazard. In general, structural impacts include damage to roofs and building frames, rather than building content. Current modeling tools are not available to estimate specific losses for this hazard. As an alternate approach, this plan considers percentage damages that could result from winter storm conditions. Table 4.3.14-3 below summarizes percent damages that could result from winter storm conditions on Westmoreland County's total general building stock (structure only). Given professional knowledge and the currently available information, the potential losses for this hazard are considered to be overestimated; hence, the following figures represent conservative estimates for losses associated with severe winter storm events.

**Table 4.3.14-3. General Building Stock Exposure (Structure Only) and Estimated Losses from Winter Storm Events in Westmoreland County**

Municipality	Total GBS (Structure Only)	1% of Total	5% of Total	10% of Total
Adamsburg Borough	\$15,958,000	\$159,580	\$797,900	\$1,595,800
Allegheny Township	\$523,902,000	\$5,239,020	\$26,195,100	\$52,390,200
Arnold	\$403,615,000	\$4,036,150	\$20,180,750	\$40,361,500
Arona Borough	\$22,313,000	\$223,130	\$1,115,650	\$2,231,300
Avonmore Borough	\$94,443,000	\$944,430	\$4,722,150	\$9,444,300
Bell Township	\$139,526,000	\$1,395,260	\$6,976,300	\$13,952,600
Bolivar Borough	\$25,972,000	\$259,720	\$1,298,600	\$2,597,200

## SECTION 4.3.14: RISK ASSESSMENT – WINTER STORM

Municipality	Total GBS (Structure Only)	1% of Total	5% of Total	10% of Total
Cook Township	\$143,085,000	\$1,430,850	\$7,154,250	\$14,308,500
Delmont Borough	\$212,924,000	\$2,129,240	\$10,646,200	\$21,292,400
Derry Borough	\$152,569,000	\$1,525,690	\$7,628,450	\$15,256,900
Derry Township	\$823,531,000	\$8,235,310	\$41,176,550	\$82,353,100
Donegal Borough	\$9,194,000	\$91,940	\$459,700	\$919,400
Donegal Township	\$159,683,000	\$1,596,830	\$7,984,150	\$15,968,300
East Huntingdon Township	\$462,907,000	\$4,629,070	\$23,145,350	\$46,290,700
East Vandergrift Borough	\$42,443,000	\$424,430	\$2,122,150	\$4,244,300
Export Borough	\$85,483,000	\$854,830	\$4,274,150	\$8,548,300
Fairfield Township	\$129,394,000	\$1,293,940	\$6,469,700	\$12,939,400
Greensburg	\$1,508,449,000	\$15,084,490	\$75,422,450	\$150,844,900
Hempfield Township	\$2,757,130,000	\$27,571,300	\$137,856,500	\$275,713,000
Hunker Borough	\$20,425,000	\$204,250	\$1,021,250	\$2,042,500
Hyde Park Borough	\$67,647,000	\$676,470	\$3,382,350	\$6,764,700
Irwin Borough	\$345,585,000	\$3,455,850	\$17,279,250	\$34,558,500
Jeannette	\$781,064,000	\$7,810,640	\$39,053,200	\$78,106,400
Latrobe	\$783,720,000	\$7,837,200	\$39,186,000	\$78,372,000
Laurel Mountain Borough	\$22,040,000	\$220,400	\$1,102,000	\$2,204,000
Ligonier Borough	\$165,937,000	\$1,659,370	\$8,296,850	\$16,593,700
Ligonier Township	\$673,987,000	\$6,739,870	\$33,699,350	\$67,398,700
Lower Burrell	\$905,687,000	\$9,056,870	\$45,284,350	\$90,568,700
Loyalhanna Township	\$108,848,000	\$1,088,480	\$5,442,400	\$10,884,800
Madison Borough	\$43,709,000	\$437,090	\$2,185,450	\$4,370,900
Manor Borough	\$192,352,000	\$1,923,520	\$9,617,600	\$19,235,200
Monessen	\$564,601,000	\$5,646,010	\$28,230,050	\$56,460,100
Mount Pleasant Borough	\$556,861,000	\$5,568,610	\$27,843,050	\$55,686,100
Mount Pleasant Township	\$784,467,000	\$7,844,670	\$39,223,350	\$78,446,700
Murrysville	\$1,655,684,000	\$16,556,840	\$82,784,200	\$165,568,400
New Alexandria Borough	\$60,202,000	\$602,020	\$3,010,100	\$6,020,200
New Florence Borough	\$41,157,000	\$411,570	\$2,057,850	\$4,115,700
New Kensington	\$1,192,499,000	\$11,924,990	\$59,624,950	\$119,249,900
New Stanton Borough	\$184,398,000	\$1,843,980	\$9,219,900	\$18,439,800
North Belle Vernon Borough	\$156,801,000	\$1,568,010	\$7,840,050	\$15,680,100
North Huntingdon Township	\$2,090,045,000	\$20,900,450	\$104,502,250	\$209,004,500
North Irwin Borough	\$40,944,000	\$409,440	\$2,047,200	\$4,094,400
Oklahoma Borough	\$57,905,000	\$579,050	\$2,895,250	\$5,790,500
Penn Borough	\$23,205,000	\$232,050	\$1,160,250	\$2,320,500
Penn Township	\$1,381,573,000	\$13,815,730	\$69,078,650	\$138,157,300



Municipality	Total GBS (Structure Only)	1% of Total	5% of Total	10% of Total
Rostraver Township	\$700,781,000	\$7,007,810	\$35,039,050	\$70,078,100
Salem Township	\$653,186,000	\$6,531,860	\$32,659,300	\$65,318,600
Scottdale Borough	\$435,262,000	\$4,352,620	\$21,763,100	\$43,526,200
Seward Borough	\$33,895,000	\$338,950	\$1,694,750	\$3,389,500
Sewickley Township	\$314,175,000	\$3,141,750	\$15,708,750	\$31,417,500
Smithton Borough	\$76,149,000	\$761,490	\$3,807,450	\$7,614,900
South Greensburg Borough	\$212,824,000	\$2,128,240	\$10,641,200	\$21,282,400
South Huntingdon Township	\$330,617,000	\$3,306,170	\$16,530,850	\$33,061,700
Southwest Greensburg Borough	\$194,304,000	\$1,943,040	\$9,715,200	\$19,430,400
St. Clair Township	\$65,491,000	\$654,910	\$3,274,550	\$6,549,100
Sutersville Borough	\$36,553,000	\$365,530	\$1,827,650	\$3,655,300
Trafford Borough	\$322,151,000	\$3,221,510	\$16,107,550	\$32,215,100
Unity Township	\$1,580,092,000	\$15,800,920	\$79,004,600	\$158,009,200
Upper Burrell Township	\$171,180,000	\$1,711,800	\$8,559,000	\$17,118,000
Vandergrift Borough	\$333,559,000	\$3,335,590	\$16,677,950	\$33,355,900
Washington Township	\$437,736,000	\$4,377,360	\$21,886,800	\$43,773,600
West Leechburg Borough	\$84,386,000	\$843,860	\$4,219,300	\$8,438,600
West Newton Borough	\$190,952,000	\$1,909,520	\$9,547,600	\$19,095,200
Youngstown Borough	\$30,385,000	\$303,850	\$1,519,250	\$3,038,500
Youngwood Borough	\$297,671,000	\$2,976,710	\$14,883,550	\$29,767,100
<b>Westmoreland County Total</b>	<b>\$27,115,213,000</b>	<b>\$271,152,130</b>	<b>\$1,355,760,650</b>	<b>\$2,711,521,300</b>

Source: HAZUS-MH 2.1

A specific area that is vulnerable to the winter storm hazard is the floodplain. At-risk building stock and infrastructure in floodplains are presented in the flood hazard profile (Section 4.3.5). Generally, losses from flooding associated with winter storms should be less than that associated with a 1-percent or 0.2-percent flood. In summary, snow and ice melt can cause both riverine and urban flooding. Estimated losses caused by riverine flooding in the County are discussed in Section 4.3.5.

#### 4.3.14.5.5 Impact on Critical Facilities

Full functionality of critical facilities such as police, fire, and medical services is essential for response during and after a winter storm event. These critical facility structures are largely constructed of concrete and masonry; therefore, they should only suffer minimal structural damage from severe winter storm events. Because power interruption can occur, backup power is recommended for critical facilities and infrastructure.

#### 4.3.14.5.6 Impact on the Economy

Infrastructure at risk for the winter storm hazard includes roadways that could be damaged by the application of salt, and intermittent freezing and warming conditions that can damage roads over time. The cost of snow and ice removal and repair of roads from the freeze/thaw process can drain local financial resources. The potential secondary impacts from winter storms also impact the local economy including loss of utilities, interruption of transportation corridors, and loss of business function.

#### 4.3.14.5.7 Impact on the Environment

Environmental impacts often include damage to trees and shrubs caused by heavy snow loading, ice build-up, and/or high winds, which can break limbs and down large trees. An indirect effect of winter storms is the threat to roadway surfaces with salt, chemicals, and other de-icing materials that can impair adjacent surface and groundwater (PEMA 2013).

Winter storms have a positive environmental impact; gradual melting of snow and ice provides groundwater recharge. However, abrupt high temperatures following a heavy snowfall can cause accelerated snowmelt, rapid surface water runoff, and severe flooding (PEMA 2013).

#### 4.3.14.5.8 Future Growth and Development

Areas targeted for potential future growth and development in the next 5 to 10 years have been identified across the County at the municipal level, and are further discussed in Section 4.4 of this Plan. For the winter storm hazard, Westmoreland County in its entirety has been identified as the hazard area. Therefore, any new development will be exposed to such risks.

#### 4.3.14.5.9 Effect of Climate Change on Vulnerability

Climate is defined not simply as average temperature and precipitation but also by the type, frequency, and intensity of weather events. Both globally and at the local level, climate change has the potential to alter the prevalence and severity of weather extremes such as winter storms. While predicting changes in winter storm events under a changing climate is difficult, understanding vulnerabilities to potential changes is a critical part of estimating future climate change impacts on human health, society, and the environment (U.S. Environmental Protection Agency [EPA] 2006).

The climate of Pennsylvania has changed in several ways. Over the past 100 years, annual average temperatures have been rising across the State. Warmer winters have led to a decrease in snow cover and an earlier arrival of spring. Recent analyses based on the Intergovernmental Panel on Climate Change models suggest a decrease in frequency and an increase in intensity of extra-tropical winter cyclones. However based on the methodology used, some models show no significant change in the storm track whereas others indicate a northward displacement of the storm track in the North Atlantic. For the mid-Atlantic region, there is little indication of a change in storm activity or track over Pennsylvania. An overall increase in winter precipitation is anticipated with a decrease in snow and increase in rain during the winter months. Projections regarding future occurrences of extra-tropical cyclones in Pennsylvania are substantially uncertain. Based on the available information and projections, winter storms are anticipated to continue to pass over Pennsylvania in the future. Future improvements in modeling smaller-scale climatic processes can be expected and will lead to improved understanding of how the changing climate will alter temperature, precipitation, and storm events in Pennsylvania (Shortle et al. 2009).

#### 4.3.14.5.10 Additional Data and Next Steps

The assessment above identifies vulnerable populations and economic losses associated with the winter storm hazard of concern. Historic data on structural losses to general building stock are not adequate to predict specific losses to this inventory; therefore, the percent of damage assumption methodology was applied. This methodology is based on FEMA's How-to Series (FEMA 386-2), Understanding Your Risks, Identifying and Estimating Losses (FEMA 2001) and FEMA's Using HAZUS-MH for Risk Assessment (FEMA 433) (FEMA 2004). The collection of additional/actual valuation data for general building stock and critical infrastructure losses would further support future estimates of potential exposure and damage for the general building stock inventory.



### 4.3.15 Dam Failure

This section provides a profile and vulnerability assessment for the dam failure hazard for Westmoreland County. A dam is an artificial barrier that has the ability to store water, wastewater, or liquid-borne materials for many reasons (flood control, human water supply, irrigation, livestock water supply, energy generation, containment of mine tailings, recreation, or pollution control). Many dams fulfill a combination of these stated functions (Association of State Dam Safety Officials 2013). They are an important resource in the United States.

Man-made dams can be classified according to the type of construction material used, the methods used in construction, the slope or cross-section of the dam, the way the dam resists the forces of the water pressure behind it, the means used for controlling seepage, and, occasionally, according to the purpose of the dam. The materials used for construction of dams include earth, rock, tailings from mining or milling, concrete, masonry, steel, timber, miscellaneous materials (plastic or rubber), and any combination of these materials (Association of State Dam Safety Officials 2013).

More than a third of the country's dams are 50 or more years old. Approximately 14,000 of those dams pose a significant hazard to life and property if failure occurs. About 2,000 unsafe dams are located throughout the United States, in almost every state.

Dam failures typically occur when spillway capacity is inadequate and excess flow overtops the dam, or when internal erosion (piping) through the dam or foundation occurs. Complete failure occurs if internal erosion or overtopping results in a complete structural breach, releasing a high-velocity wall of debris-filled waters that rush downstream damaging and/or destroying anything in its path (Federal Emergency Management Agency [FEMA] 1996).

Dam failures can result from one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam
- Deliberate acts of sabotage
- Structural failure of materials used in dam construction
- Movement and/or failure of the foundation supporting the dam
- Settlement and cracking of concrete or embankment dams
- Piping and internal erosion of soil in embankment dams
- Inadequate maintenance and upkeep (FEMA 2013a)

#### **Regulatory Oversight for Dams**

The potential for catastrophic flooding caused by dam failures led to the passage of the National Dam Safety Act (Public Law 92-367). The National Dam Safety Program (NDSP) has been used for 30 years to protect Americans from dam failure. The NDSP is a partnership between the states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Under FEMA's leadership, state assistance funds have allowed all participating states to improve their programs through increased inspections, emergency action planning, and the purchase of needed equipment. FEMA has also expanded existing training programs and initiated new training programs. Grant assistance from FEMA provides support for the improvement of dam safety programs that regulate most of the dams in the United States (FEMA 2013a).

### **Pennsylvania Department of Environmental Protection**

The Pennsylvania Department of Environmental Protection (PADEP) holds responsibility for dam safety. Hazard Potential Category 1 dams are those “where its failure could result in significant loss of life, excessive economic losses, and significant public inconvenience.” Hazard Potential Category 2 dams are those “where its failure could result in the loss of a few lives, appreciable property damage, and short-duration public inconvenience” (PADEP 2009). Owners of dams classified as Hazard Categories 1 or 2 (i.e., “high-hazard” dams) are required to create an Emergency Action Plan (EAP) that describes the dam, the inundation area if the dam was to catastrophically fail, and procedures for responding to the dam failure (e.g., notification of the vulnerable population).

### **U.S. Army Corps of Engineers Dam Safety Program**

The U.S. Army Corps of Engineers (USACE) is responsible for safety inspections of some federal and non-federal dams in the United States that meet the size and storage limitations specified in the National Dam Safety Act. USACE has inventoried dams and has surveyed each state and federal agency’s capabilities, practices, and regulations regarding design, construction, operation, and maintenance of the dams. USACE has also developed guidelines for inspection and evaluation of dam safety (USACE 1997).

### **Federal Energy Regulatory Commission Dam Safety Program**

The Federal Energy Regulatory Commission (FERC) has the largest dam safety program in the United States. FERC cooperates with a large number of federal and state agencies to ensure and promote dam safety and, more recently, homeland security. A total of 3,036 dams are part of regulated hydroelectric projects and are included in the FERC program. Two-thirds of these are more than 50 years old. As dams age, concern about their safety and integrity grows, making oversight and regular inspection especially important (FERC 2011). FERC staff inspects hydroelectric projects on an unscheduled basis to investigate the following:

- Potential dam safety problems
- Complaints about constructing and operating a project
- Safety concerns related to natural disasters
- Issues concerning compliance with the terms and conditions of a license (FERC 2011)

Every 5 years, an independent consulting engineer, approved by the FERC, must inspect and evaluate projects with dams higher than 32.8 feet (10 meters) or with a total storage capacity of more than 2,000 acre-feet (FERC 2011).

FERC monitors and evaluates seismic research in geographic areas where there are concerns about seismic activity. This information is applied in investigating and performing structural analyses of hydroelectric projects in these areas. FERC staff also evaluates the effects of potential and actual large floods on the safety of dams. During and after floods, FERC staff visits dams and licensed projects, determines the extent of damage, and directs any studies or remedial measures the licensee must undertake. FERC’s *Engineering Guidelines for the Evaluation of Hydropower Projects* guides the FERC engineering staff and licensees in evaluating dam safety. The publication is frequently revised to reflect current information and methodologies (FERC 2011).

FERC requires licensees to prepare EAPs and conducts training sessions on developing and testing these plans. The plans outline an early warning system in the event of an actual or potential sudden release of water from a dam failure. The plans include operational procedures that may be implemented when performing regulatory measures, such as reducing reservoir levels and reducing downstream flows, as

well as procedures for notifying affected residents and agencies responsible for emergency management. These plans are frequently updated and tested to ensure that all applicable parties are informed of the proper procedures in emergency situations (FERC 2011).

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### 4.3.16 Environmental Hazard

This section provides a profile and vulnerability assessment for the environmental hazard profile for Westmoreland County. Hazards in this profile include releases of hazardous materials and explosions.

Westmoreland County is home to over 476 identified facilities that utilize, ship, or house chemicals that are considered hazardous in nature. These facilities have been identified under the Superfund Amendments and Reauthorization Act (SARA) as exceeding the quantity threshold for reporting.

Product release into the local environment can be generated from a fixed facility or along any location on a route of travel, and may be the result of carelessness, technical failure, external incidents, or an intentional act against the facility or container. The volatility of products being stored or transported, along with the potential impact on a local community, may increase the risk of intentional acts against a facility or transport vehicle. The release of certain products considered to be hazardous materials can have an immediate adverse impact on the general population, ranging from the inconvenience of evacuations, to personal injury, and even death. In addition to human impacts, any release can compromise the local environment through the contamination of soil, groundwater, or local flora and fauna.

For the purposes of this Plan update, explosions are included under the environmental hazard profile, as all reported and confirmed explosions have been the result of the loss of containment of a hazardous material, thus creating the explosion. According to the National Fire Protection Association (NFPA), the definition of explosion is “the sudden conversion of potential energy (chemical or mechanical) into kinetic energy with the production and release of gases under pressure, or the release of gas under pressure. These high-pressure gases then do mechanical work such as moving, changing, or shattering nearby materials” (NFPA1998). This pairing of the two hazards is a natural process; once the explosion occurs, the product released is always considered a hazardous material.

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## 4.3.17 Fire (Urban/Structural Fire)

### 4.3.17.1 Location and Extent

Structural fires within Westmoreland County have had a detrimental impact on life, property, and the local economy over the past decade. The age of many residential structures within the region combined with changes in building construction and materials have created a threat of fire loss that is occurring on a regular basis.

As defined by the National Fire Protection Agency (NFPA) in the *NFPA 901: Standard Classifications for Incident Reporting and Fire Protection Data*, a structure fire is defined as “Any fire inside, on, under, or touching a structure.” This definition includes any mobile living structure such as a mobile or modular residence, but does not include roadworthy vehicles such as recreation vehicles (National Fire Protection Agency 2011).

### 4.3.17.2 Range of Magnitude

The severity of structural fires varies according to the losses associated with the incident. The impact to the local economy is minimal with the loss of a residential structure, but effects of the loss of a large manufacturing facility that employs a large number of people can be extensive. Likewise, the impact to the local environment from a single residential fire is minimal, while the impact from an industrial or commercial fire can take years to measure. Finally, the loss of life caused by structural fires appears to be opposite of the previous two impacts. The loss of life during a residential fire is more likely than during of an industrial or commercial building fire. The building composition combined with the hour of the incident combine to increase the loss of life during a residential-type fire.

The structural fires within Westmoreland County are usually small and generally affect residential structures. These fires are limited in duration and are generally contained within the local jurisdiction. While the average fire is small, the threat from a large or even catastrophic fire is always present. Many operations within larger industrial and commercial sites within Westmoreland County are prone to and have experienced small fires that if improperly contained can, and do, lead to catastrophic fire losses. Combined with the presence of volatile materials, these threats are ever changing and increasing within the region.

Vacant buildings (both residential and commercial) pose a particular threat concerning structural fires. Multiple incidents of structural fire in unoccupied homes have been reported through the Knowledge Center.

### 4.3.17.3 Past Occurrence

Within Westmoreland County from 2007 to 2012, 314 structural fires were reported to the Pennsylvania Emergency Management Agency (PEMA). While not an all-encompassing listing, these fires represent the threshold set forth by the state to be a reportable incident. Table 4.3.17-1 shows an annual fire report for Westmoreland County from 2007 to 2012. There have been no federally declared disasters as a result of structural fires in Pennsylvania.

**Table 4.3.17-1: Reported Structural Fires 2007-2012**

County	2007	2008	2009	2010	2011	2012	Total
Westmoreland	51	51	39	65	64	44	<b>314</b>

Source: Knowledge Center, 2013

#### 4.3.17.4 Future Occurrence

Based on the Risk Factor Methodology Probability Criteria, structural fires are categorized as *Highly Likely*. According to the NFPA 2009 report *A Few Facts at the Household Level*, based on historical data collected, an average household is expected to experience a fire within a structure every 15 years, based on an average expectance of the household to be 78 years. While most of these fires will be considered small and may not cause any significant damage, the possibility of a catastrophic loss caused by fire is present (see Table 4.3.17-2). Given that there have been many fires each year in Westmoreland County, the annual probability of a structure fire occurring in the county is 100 percent.

**Table 4.3.17-2: Likelihood of Future Occurrences of Structural Fire**

County	Avg. #/Year	% Probability	Category
Westmoreland	52.3	100	Highly Likely

The NFPA reports a decreasing trend in structural fires within the United States over the past 30 years. Based on public outreach campaigns to promote fire safety awareness and smoke detector use, the agency is reporting a decrease of more than 7,000 deaths per year in the 1970's to just under 3,000 deaths in 2010 (NFPA 2013). Despite the decrease reported in fire fatalities, Westmoreland County remains consistent with the number of fires reported over the previous 5 years. The quantity of residential and industrial structures within Westmoreland County, combined with a varying range of fire code enforcement, equates to a greater probability of loss in the future. In addition, the influx of commercial and industrial sites within the Westmoreland County also increases the possibility of future commercial or industrial fires.

#### 4.3.17.5 Vulnerability Assessment

Structural fires most frequently affect the residential communities within Westmoreland County. While the impact of most structural fires is considered minimal because of the availability of support services after a fire, these fires need to be classified as a high threat based on the frequency and potential for injury and loss of life.

As the population density increases within Westmoreland County, there is a greater probability of structural fires. The sustained growth within the county, both commercial and residential, will continue to affect the threat of structural fires in the future.



## 4.3.18 Nuclear Incident

Nuclear hazards and incidents generally refer to incidents involving (1) release of significant levels of radioactive materials or (2) exposure of workers or the general public to radiation. Primary concerns following a nuclear incident or accident are: impact on public health from direct exposure to a radioactive plume; inhalation of radioactive materials; ingestion of contaminated food, water, and milk; and long-term exposure to deposited radioactive materials in the environment that may lead to either acute (radiation sickness or death) or chronic (cancer) health effects.

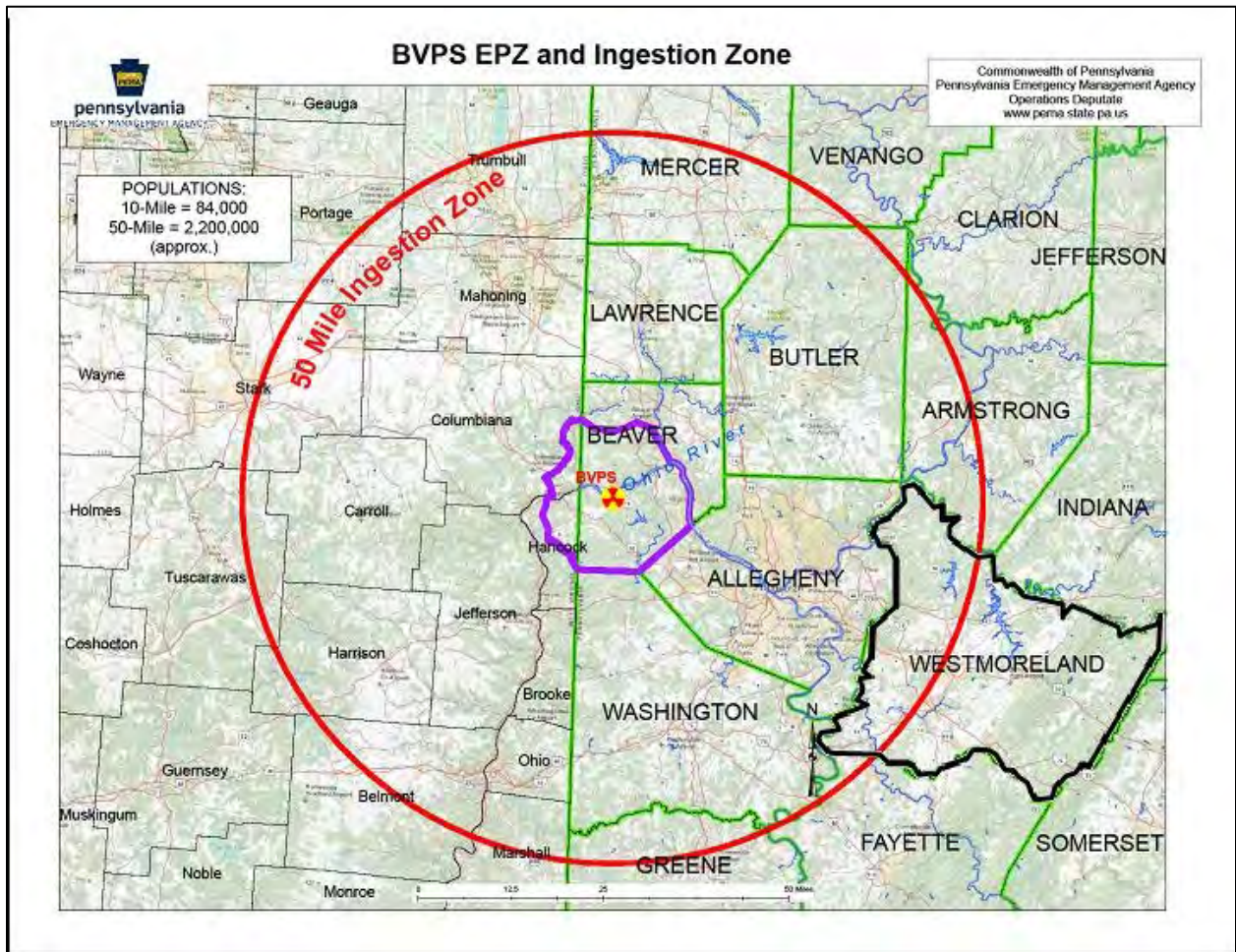
### 4.3.18.1 Location and Extent

Within the Commonwealth of Pennsylvania are five nuclear power generation stations. The Beaver Valley Power Station (BVPS) is outside and west of Westmoreland County in central Beaver County, but maintains a 50-mile ingestion exposure pathway that includes parts of Westmoreland County. BVPS maintains two pressurized water reactor units on a 453-acre site, producing 1,800 megawatts (MW) of electricity (FirstEnergy Nuclear Operating Company [FirstEnergy] 2012).

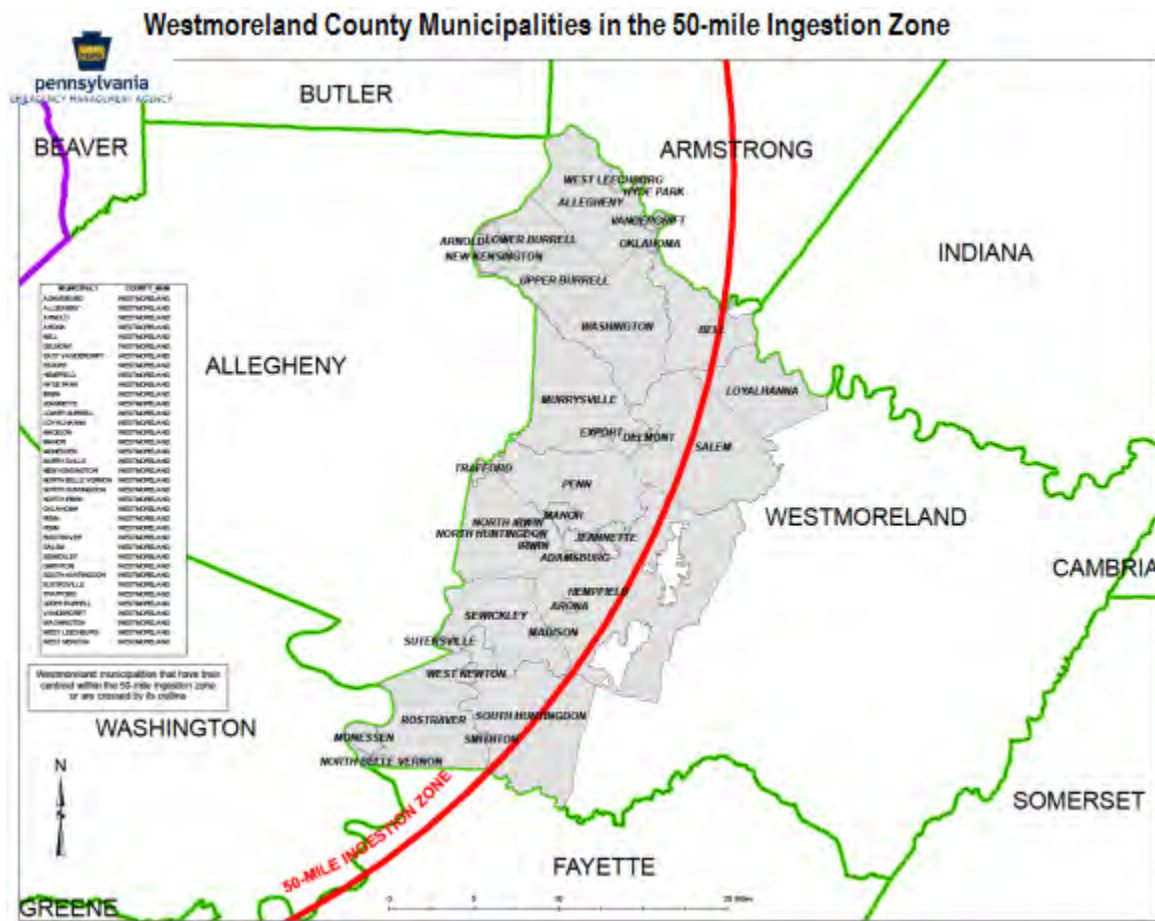
The nuclear industry has adopted pre-determined, site-specific Emergency Action Levels (EAL). The EALs provide the framework and guidance for observing, addressing, and classifying severity of site-specific incidents and conditions that are communicated to off-site emergency response organizations (Nuclear Regulatory Commission [NRC] 2008). Additional EALs specifically deal with issues of security, such as threats of airborne attack, hostile action within the facility, or attack on the facility. These EALs ensure that appropriate notifications of a security threat will occur in a timely manner.

The ingestion zone is defined as an area commencing at a nuclear power plant site and extending within a radius of 50 miles from the plant site in this State. This area is further defined as that area within which an individual may incur exposure caused by ingestion of radiologically contaminated water or foods. Figures 4.3.18-1 and 4.3.18-2 provide visual representations of the Westmoreland County jurisdictions that fall within the 50-mile ingestion zone. These jurisdictions, proximate to BVPS and within the ingestion zone, are most vulnerable to an incident within that facility. No Westmoreland jurisdictions fall within the 10-mile plume exposure pathway Emergency Planning Zone (EPZ).

Figure 4.3.18-1. Beaver Valley Power Station



Source: Pennsylvania Emergency Management Agency (PEMA) 2013

*Figure 4.3.18-2: Westmoreland Jurisdictions in the 50-Mile Ingestion Zone*

Source: PEMA 2013

The following jurisdictions within Westmoreland County are within the 50-mile ingestion zone for the BVPS:

- Adamsburg
- Allegheny
- Arnold
- Arona
- Bell
- Delmont
- East Vandergrift
- Export
- Hempfield
- Hyde Park
- Irwin
- Jeannette
- Lower Burrell
- Loyalhanna
- North Belle Vernon
- North Huntingdon
- North Irwin
- Oklahoma
- Penn Borough
- Penn Township
- Rostraver
- Salem
- Sewickley
- Smithton
- South Huntingdon
- Sutersville
- Trafford
- Upper Burrell

- Madison
- Manor
- Monessen
- Murrysville
- New Kensington
- Vandergrift
- Washington
- West Leechburg
- West Newton

The above-listed jurisdictions maintain numerous locations considered critical infrastructure. Critical infrastructure within Westmoreland County is discussed in Section 2 of this Plan.

Westmoreland County maintains the classification of Support County for the BVPS facility, as Westmoreland County resources would be deployed to support counties and evacuees within the 10-mile EPZ. This classification entails a variety of responsibilities including planning, training, exercising, and provision of support to the BVPS. Westmoreland County maintains a nuclear planning annex to its emergency operations plan (EOP), trains regularly, and completes exercise programs set forth by state and federal entities.

#### 4.3.18.2 Range of Magnitude

As per regulations specified by the Federal Emergency Management Agency (FEMA) and NRC, each facility is required to notify jurisdictional agencies of an incident or occurrence within that facility. NRC uses four classification levels for nuclear incidents (NRC 2008). The Pennsylvania Emergency Management Agency (PEMA) and facility owners with whom PEMA coordinates use the following notification levels based on an internal trigger:

- **Unusual Event:** Incidents are occurring or have occurred that indicate potential degradation in the level of safety of the plant. No release of radioactive material requiring off-site response or monitoring is expected unless further degradation occurs.
- **Alert:** Incidents are in process or have occurred that involve actual or potential substantial degradation in the level of safety of the plant. Any releases of radioactive material from the plant are expected to be limited to a small fraction of the U.S. Environmental Protection Agency (EPA) Protective Action Guides (PAG).
- **Site Area Emergency:** Incidents in process or that have occurred which result in actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA PAGs except near the site boundary.
- **General Emergency:** Actual or imminent substantial core damage or melting of reactor fuel with potential for loss of containment integrity. Radioactive releases during a general emergency can reasonably be expected to exceed the EPA PAGs over more than the immediate site area.

The western region of Westmoreland County is closest to the BVPS facility, but is well outside the prescribed 10-mile EPZ or evacuation area. In the event of an incident within BVPS, Westmoreland County would become a temporary staging location for some of the hundreds of thousands of residents seeking safety outside the 10-mile EPZ. Additionally, jurisdictions within the 50-mile ingestion exposure pathway could receive deposits of radioactive particles on crops, bodies of water, and ground surfaces, rendering local agricultural harvest unusable for consumption by either humans or livestock.



### 4.3.18.3 Past Occurrence

Westmoreland County experienced a test reactor meltdown accident in the country's first privately owned reactor in 1960 at the Westinghouse Waltz Mill facility. One fuel element melted, resulting in the disposition of 2 million gallons of contaminated water generated during the accident. A portion of the water was retained on-site in lagoons, a condition that eventually led to detectable Strontium-90 in ground water plus contaminated soil. Radioactive krypton and xenon gasses were also released into the atmosphere (Hopey 1993). Westinghouse began an estimated \$50 million clean-up effort in 1997. In 2000, a train carrying radioactive soil derailed west of Mount Pleasant. The contaminated soil was not released from their containers (Hopey 2000).

In addition to the Westinghouse Waltz Mill facility incident, Pennsylvania is home to the only recorded nuclear emergency in the U.S. In 1979, the Three Mile Island Nuclear Generating Station declared a General Emergency following an internal system failure. Repercussions from this event were swift, with sweeping changes to NRC oversight that included assignment of responsibility to FEMA for outside support. Growth in the nuclear power industry immediately slowed, with the number of facilities decreasing over the next decade. In addition, public confidence in the nuclear industry decreased considerably.

While reports show conflicting information regarding medical impacts on the residential population following the disaster, costs of the cleanup phase of this incident exceeded \$1 billion. No FEMA disaster declarations have since occurred regarding nuclear emergencies in Pennsylvania.

### 4.3.18.4 Future Occurrence

Within the U.S., the low frequency of fixed facility nuclear incidents that exceed the Alert Level indicates the stability of the industry. Based upon the Risk Factor Methodology Probability Criteria, probability of an incident at the BVPS facility is classified as *unlikely*. In addition, FirstEnergy, the parent company to BVPS, continues to improve systems within the facility and communicate with local, state, and federal entities to establish emergency procedures for protecting the health and safety of the public (FirstEnergy 2011).

### 4.3.18.5 Vulnerability Assessment

Effects from a radiological incident at a fixed facility would vary depending on the product released (type of radiation), amount of radiation released, current weather conditions, and time of day. The priority following an incident at any of the facilities within the Commonwealth of Pennsylvania is life and safety of all individuals within the area impacted. Secondary to health and safety would be effects on critical infrastructure, environment, property, and the economy.

Contamination of agriculture, livestock, and production can lead to loss of commerce with other regions of the State, country, and even the world. Recently, many countries halted imports of products from Japan for fear of contamination following the tsunami-related nuclear incident at the Fukushima Power Plant. This loss in revenue compounded losses that Japan and its region were already encountering following the initial disaster.

Impacts within the affected area can include loss of utility service, contamination of local crops and livestock, loss of residential property due to measurable quantities of nuclear materials, and increased risk to health and wellbeing of individuals within the area.

Recognizing the vulnerability, Westmoreland County maintains a radiological emergency response plan. This plan accords with regulations specified by NRC and PEMA. The plan addresses actions to respond to and mitigate a possible radiological release. To support the radiological response plan, Westmoreland County participates in exercises designed to validate planning described within county documents. The County has participated in command and mobile command exercises with Beaver County relevant to the BVPS, and has toured the BVPS as part of Region 13 and PEMA initiatives for planning awareness.



### 4.3.19 Terrorism

Terrorism is defined in the Code of Federal Regulations as “the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives” (28 CFR §0.85). Terrorism is less about causing physical damage and injuries or /fatalities as it is creating fear in the population. This fear may result in a change in key policy or business operations (such as logging) to cease. Terrorism may include the use of weapons of mass destruction (WMD), including chemical, biological, radiological, nuclear, and high-yield explosive weapons; armed attacks; industrial sabotage; cyber terrorism; and other means. There may be significant variation even within these general categories, especially in the areas of chemical and biological weapons.

**DUE TO THE SENSITIVE INFORMATION IN THIS SECTION, PAGES 4.3.19-2 THROUGH 4.3.19-3 HAVE BEEN OMITTED FROM THIS PUBLIC COPY.**

### 4.3.20 Transportation Accident

Disasters that can result from hazards that involve an element of human intent, negligence, error, or technological failure are called man-made hazards. Transportation hazards include hazardous materials in transit, vehicular accidents, aviation accidents, at-grade railroad crossings, and roadways vulnerable to floods. In 2011, the National Transportation Safety Board (NTSB) reported 34,434 transportation-related fatalities. Of those 34,434, 32,367 were highway incidents, 759 were rail incidents, 494 were aviation incidents, 14 were pipeline incidents, and 800 were marine incidents (NTSB 2011).

A transportation hazard may be defined as a condition created by moving anything by common carrier. Transportation hazards can be divided into two categories: hazards created by the material that is being transported; and hazards created by the transportation medium. Transportation systems available in Westmoreland County include air, rail, and road. A major accident in each of these transportation systems is possible. All of these systems and supporting transportation resources provide services locally, regionally, and nationally.

- Vehicular Accidents: A vehicular accident is a road traffic incident that usually involves one vehicle colliding with another vehicle or other road user, such as an animal or a stationary roadside object. A vehicular accident may result in injury, property damage, or possibly fatalities. Many factors contribute to vehicular accidents, including equipment failure, poor road conditions, weather, traffic volume, and driver behavior.
- Aviation Accidents: According to the International Civil Aviation Organization, an aviation accident is an occurrence with the operation of an aircraft that takes place between the time a person boards the aircraft with the intention of flying to a destination to the time the person has disembarked the aircraft. There are three different situations that qualify as an aviation accident: a person is fatally or seriously injured; the aircraft sustains damage or structural failure; or the aircraft is missing or inaccessible. An aviation incident is an occurrence, other than an accident, associated with operation of an aircraft that affects or could affect the safety of operation (International Civil Aviation Organization 2001).
- Hazardous Materials (HAZMAT) in Transit: A HAZMAT is defined as a substance or material determined to be capable of posing an unreasonable risk to health, safety, or property when transported. They come in various forms that can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. As stated previously in the HAZMAT definition, unreasonable risk covers a broad range of health, fire, and environmental considerations. HAZMAT substances include explosives, flammable solids, substances that become dangerous when wet, oxidizing substances, and toxic liquids. An accident involving a vehicle carrying HAZMAT becomes a HAZMAT incident if the HAZMAT leaks, is involved in a fire, or if the potential for release, fire, or other hazard exists. Hazards can occur during production, storage, transportation, use, or disposal (Campbell Date Unknown; FEMA 2006).
- Railway Accidents: Railway accidents are accidents involving one or more trains.

Transportation accidents described here include incidents involving road, air, and rail travel. Hazardous materials during transportation are an additional transportation threat to Westmoreland County. The volatility of products transported, along with the potential impact on a local community, may increase the risk of intentional acts against a transport vehicle. The release of certain products considered to be hazardous materials can have an immediate adverse impact on the general population, ranging from the inconvenience of evacuations, to personal injury, and even death. Additional effects of the release of

hazardous materials from transportation accidents are addressed in the Environmental Hazard profile (Section 4.3.16).

#### 4.3.20.1 Location and Extent

##### Vehicular Accidents

Major roadways in Westmoreland County include I-70, the Pennsylvania Turnpike – I-76, Pennsylvania Turnpike Route 66, U.S.-22, U.S.-30, and U.S.-119. Westmoreland County has more than 3,500 miles of roadways, divided as shown in Table 4.3.20-1, and illustrated in Figure 4.3.20-1.

**Table 4.3.20-1: Westmoreland County Transportation Network**

Category	Miles
Interstate Highway	57.7
Freeways/Expressways	27.6
Principal Arterials	144.8
Minor Arterials	273.5
Major Collectors	409.7
Minor Collectors	150.9
Local Roads	2,601.5
<b>Total</b>	<b>3,665.7</b>

Source: Pennsylvania Department of Transportation (PennDOT), Pennsylvania Highway Statistics, 2012 Highway Data

Transportation accidents can occur at any point along these roadways, with many occurring at the intersection of two or more roadways.

In response to the collapse of the I-35W Bridge in Minneapolis in November 2007, PennDOT assessed the structural integrity of all bridges in the Commonwealth. Table 4.3.20-2 shows the total number of bridges in Westmoreland County, as well as the number of those that are structurally deficient (in parentheses). Each structurally deficient bridge poses a risk for transportation accidents.

**Table 4.3.20-2: Bridges in Westmoreland County**

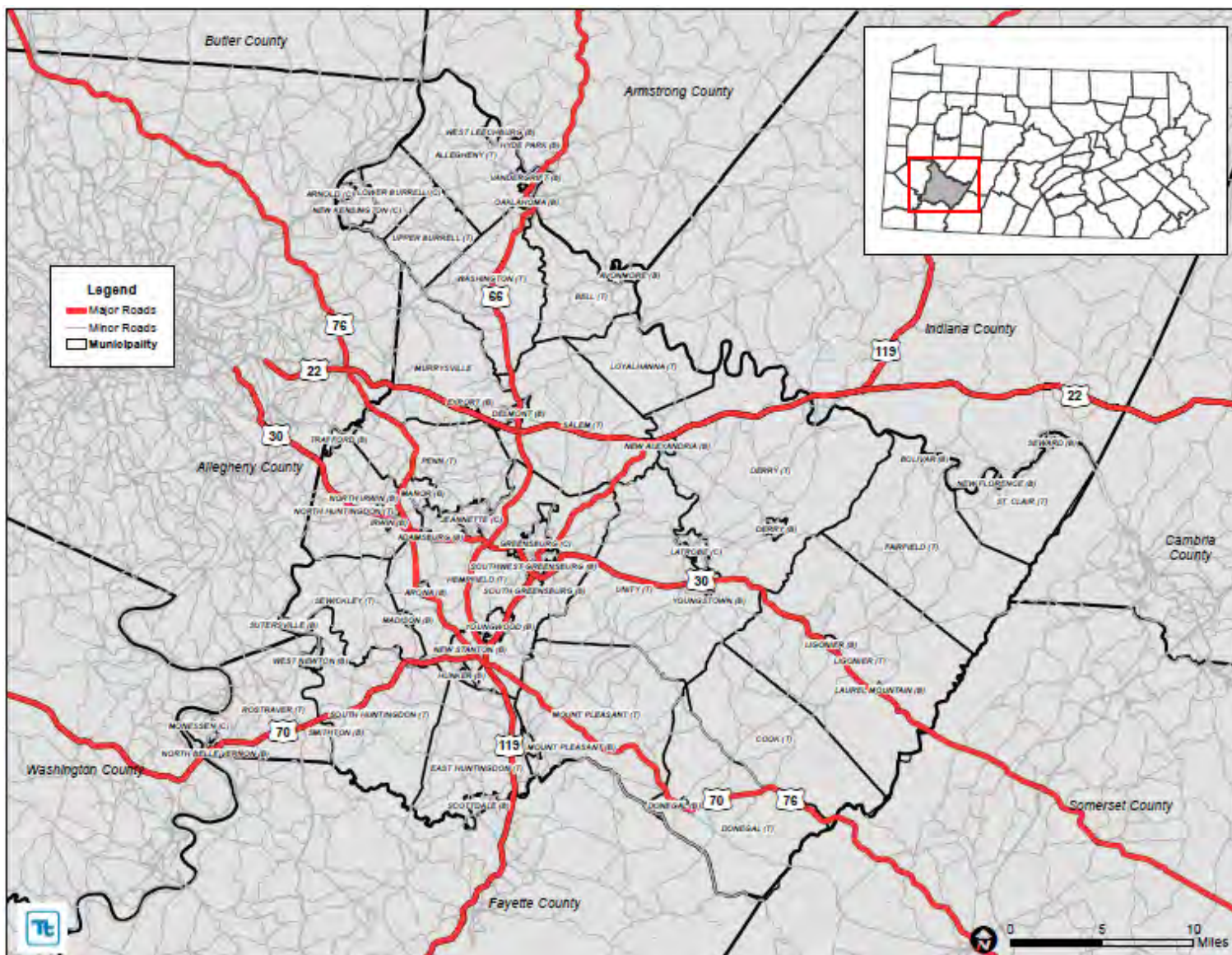
On State Roads	On Local Roads
734 (168)	161 (53)

Source: PennDOT, 2013

As of October 2013, there were 6,588 structurally deficient bridges throughout Pennsylvania (PennDOT 2013). PennDOT has plans in place to rebuild more than 600 of these bridges during and beyond 2014. No data regarding the schedule to repair or rebuild Westmoreland County's structurally deficient bridges were available.

There is no warning time for vehicular accidents. Contributing factors for these accidents are typically associated with the driver, vehicle, and the environment. Factors associated with the driver include error, speeding, experience, and blood-alcohol level. Factors associated with the vehicle include type, condition, and center of gravity. Environmental factors include quality of the infrastructure, weather, and obstacles. The majority of vehicular accidents are attributed to the driver. Vehicular accidents can have severe effects on those directly involved, as well as to others not directly involved. Other effects may include severe traffic delays, lost sales to businesses, delayed commodity shipments, and increased insurance costs (Cova and Conger 2003).

Figure 4.3.20-1. Major Roadways in Westmoreland County



### **Railway Accidents**

Owners of rail lines include CSX Transportation, Norfolk Southern, Wheeling & Lake Erie, Southwest Pennsylvania, Turtle Creek Industrial, and Allegheny Valley. In addition, Amtrak's passenger train, the Pennsylvanian, operates one per day in each direction with two stations situated in Westmoreland County in Greensburg and Latrobe.

Rail accidents generally fit into one of three categories (PEMA 2013):

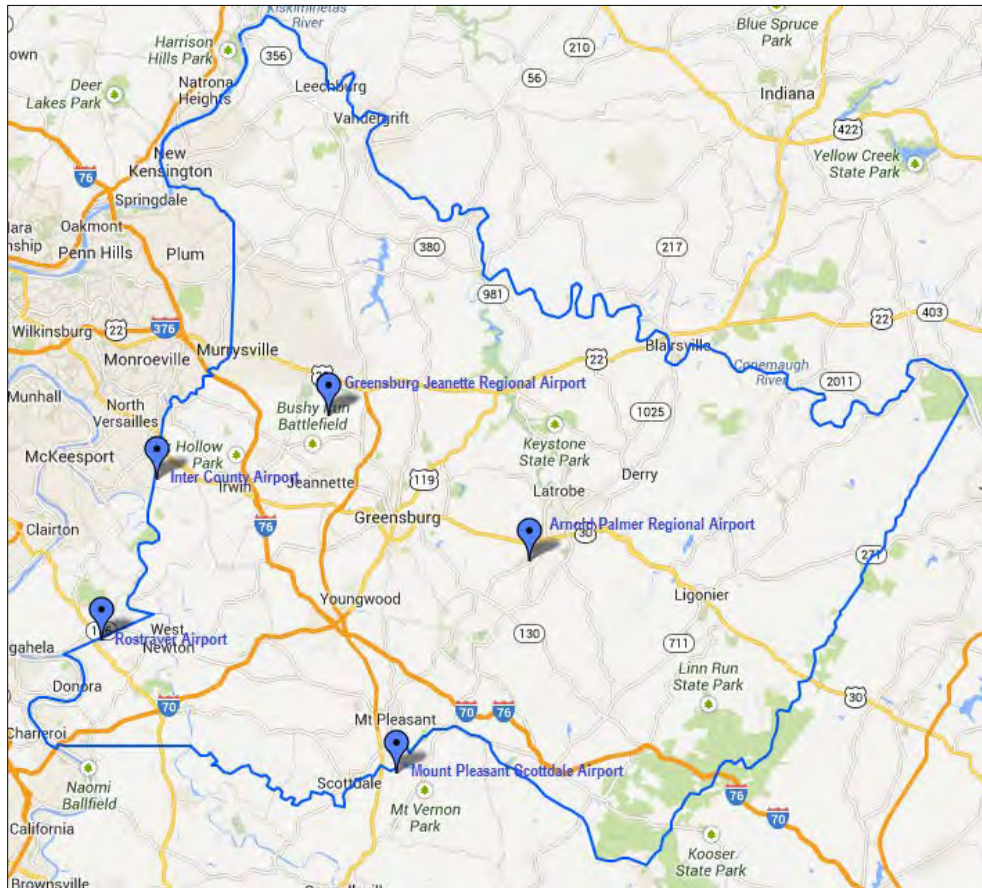
- Derailment – the train leaves the rails
- Collision – a train strikes another train or a vehicle
- Other – including objects on the rails, fires, or explosions.

Classified hazardous materials are transported along the County's railway system, increasing the potential for a railway accident with an associated hazardous materials release. Such an accident would further place Westmoreland communities at risk. Additional information regarding the release of hazardous materials is included in the Environmental Hazard profile (Section 4.3.16).

### **Aviation Accidents**

There are several airports in Westmoreland County. The most notable are the Arnold Palmer Regional Airport in Unity Township and the Allegheny County Airport in West Mifflin, which both provide passenger and general aviation services. Other airports in Westmoreland County include the Greensburg-Jeanette Regional Airport in Penn Township, Mount Pleasant Scottdale Airport in Mount Pleasant Township, Rostraver Airport in Rostraver Township, and Inter County Airport in North Huntingdon Township. Additionally, Aero Medical Services contributes to air traffic within the county. Figure 4.3.20-2 shows the locations of these airports. In addition, there is a large international airport in Pittsburgh with associated air traffic patterns in the skies above Westmoreland County, which may experience problems in flight and crash in the county.



*Figure 4.3.20-2: Airports in Westmoreland County*

Approximately 80-percent of all aviation accidents occur shortly before or during take-off and landing. These accidents are usually said to have been caused by human error. Mid-flight accidents are rare but not unheard of. A survey was conducted on 1,843 plane crashes that occurred between 1950 and 2006. The survey showed that of those 1,843 plane crashes, 53 percent were the result of pilot (human) error; 21 percent caused by mechanical failure; 11-percent were caused by weather; 8 percent attributed to other human error (lack of communication or improper maintenance); 6 percent caused by sabotage and terrorism; and 1 percent resulting from other causes (Krasner 2009).

Aviation accidents are often devastating incidents that may result in serious injuries or fatalities. The Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB) are the agencies responsible for monitoring air travel and investigation accidents. Some of the most common causes of aviation accidents occur as a result of violations of FAA and NTSB regulations. Some other causes of accidents include, but are not limited to:

- Pilot or flight crew errors – Pilot errors are the number one cause of aviation accidents and account for the highest number of fatalities. Pilots have the responsibility to transport passengers safely from one place to another and follow the FAA and NTSB regulations to better ensure passenger safety. If a pilot or flight crew makes an error, an accident may occur.
- Faulty equipment – Faulty aircraft equipment or mechanical features are another common cause of an aviation accident.



- Aircraft design flaws – The manufacturer of an aircraft is responsible for an aviation accident if the structural design is flawed and results in an accident.
- Failure to properly fuel or maintain the aircraft – If any regulations and safety standards set by the FAA or NTSB are violated, an accident may occur.
- Negligence of Federal Air Traffic Controllers – The failure of air traffic controllers to properly monitor the airways is another cause of aviation accidents (Aviation Law News, Date Unknown).

#### 4.3.20.2 Range of Magnitude

Roadway accidents in Westmoreland County range from minor crashes to more serious incidents that involve injuries or fatalities, or result in the release of hazardous materials (see Section 4.3.16). Pennsylvania Department of Transportation, District 12-0, provided information regarding injuries and fatalities associated with automobile crashes and for pedestrians involved in transportation incidents for this Plan. Additional details are available from the Westmoreland County Coroner’s Office on the statistics of fatal vehicular incidents within Westmoreland County, including the year-end reports for 2011 - 2013 (<http://www.co.westmoreland.pa.us/index.aspx?nid=290>).

**Table 4.3.20-3: Injuries and Fatalities from Automobile Crashes**

Timeline	Injuries (Major)	Fatalities
2009-2011	282	116
2012-2013	208	77
<b>Total:</b>	<b>490</b>	<b>193</b>

**Table 4.3.20-4: Injuries and Fatalities of Pedestrians**

Timeline	Injuries (Major)	Fatalities
2009-2011	8	9
2012-2013	7	9
<b>Total:</b>	<b>15</b>	<b>18</b>

Source: PennDOT, District 12 2013

Rail accidents can vary widely in terms of injuries, fatalities, property damage, and interruption of service, depending on the nature and severity of the accident.

Aircraft accidents can vary from a single-engine aircraft having a “hard landing” and causing damage to the aircraft, to the crash of a small turboprop or jet aircraft, to the crash of a large jet aircraft (such as a Boeing 727). Additionally, aircraft accidents could include helicopter or experimental aircraft crashes. Radio-controlled or drone aircraft devices pose another threat in regards to aviation accidents. These devices tend to be experimental and lack defined regulatory oversight, potentially complicating issues with and for the public should one of these devices crash.

The worst-case transportation accident within the County would be a tractor trailer carrying an extremely hazardous substance (see Section 4.3.16) overturning and suffering a massive release of its cargo on a major roadway. This incident would block traffic on Westmoreland County’s major transportation routes, and could threaten the health and safety of individuals on the roadways and in surrounding neighborhoods. In addition, a release could cause the closure of critical facilities in the County.

### 4.3.20.3 Past Occurrence

Major accidents (such as multi-vehicle accidents, those that close roads or bridges, or those involving school buses) are reported by the Westmoreland County Department of Public Safety to PEMA. Table 4.3.20-5 shows a summary of these accidents from 2006 to 2012. While this table reflects the accidents that are reported to the counties and Commonwealth, there are significantly more minor accidents that are not reported. The dramatic increase in accidents from 2006 to 2007 is a result of increased reporting of accidents in the Commonwealth.

**Table 4.3.20-5: Summary of Major Accidents in Westmoreland County, 2006 to 2012**

Year	Vehicle Accidents	Bus Accidents	Railroad Incidents	Aircraft Accidents
2006	4	0	0	0
2007	43	2	6	4
2008	25	1	11	4
2009	38	5	6	2
2010	32	2	3	1
2011	37	3	5	1
2012	56	1	0	1
<b>Total</b>	<b>235</b>	<b>14</b>	<b>31</b>	<b>13</b>

Source: Knowledge Center report 2006-2012

Table 4.3.20-6 summarizes significant transportation accidents in Westmoreland County from 2006 through 2012.

**Table 4.3.20-6: Significant Accidents in Westmoreland County, 2006 to 2012**

Date(s) of Event	Event Type	Description
04/23/2006	Aircraft Accident	Substantial damage to the aircraft; no injuries
12/14/2006	Vehicular Accident	A vehicular accident occurred involving a car and semi-truck near Gratztown in Sewickley Township on Sutersville Road. State Police closed the road for an extended period for accident reconstruction. There was one reported fatality.
1/20/2007	Vehicular Accident	Both north and southbound Route 66 was closed by a two-vehicle accident with entrapment and entanglement. Two medical helicopters, rescue units, medical units, and police responded to the incident.
2/17/2007	Rail and Vehicular Accident	A CSX train and truck collided at the crossing off of Route 906 on the access road to Three Rivers Marina.
11/28/2007	Aircraft Accident	Substantial damage to the aircraft; one person seriously injured
1/2/2008	Vehicular Accident	I-70 east near exit 54 was shut down as a result of a vehicular accident. A semi-truck involved in the accident was hanging over the I-70 bridge, and fuel leaked into Sewickly Creek. Fire, EMS, State Police, and the Pennsylvania Department of Environmental Protection responded to the incident.
1/4/2008	Rail Accident	Two freight trains collided on the Norfolk Southern Rail Line. HazMat, State Police, Fire Department, and EMS responded.
3/31/2008	Aviation Accident	A small plane crashed in the City of Latrobe

Date(s) of Event	Event Type	Description
8/2/2008	Rail Accident	Norfolk Southern reported an individual struck by a train. All train traffic was stopped within the vicinity of the accident. Fire, police, EMS, and coroner responded to the incident.
08/19/2008	Aircraft Accident	Substantial damage to the aircraft; no injuries
08/31/2008	Aircraft Accident	Substantial damage to the aircraft; one fatality
5/14/2009	Vehicular Accident	A vehicular accident occurred on Garvers Ferry Road/Wildlife Lodge Road in Lower Burrell. Police reports indicated six patients and one fatality on scene.
12/4/2009	Vehicular Accident	A fuel tanker was reported on fire on the Pennsylvania Turnpike at mile marker 73.8 eastbound. Fire, EMS, and State Police responded to the incident.
08/07/2010	Aircraft Accident	Substantial damage to the aircraft; two fatalities
8/9/2010	Plane Accident	A small plane crashed into a residence along Route 286, causing the structure to catch fire.
04/13/2011	Aircraft Accident	Substantial damage to the aircraft; no injuries
6/27/2011	Vehicular Accident	Vehicular accident involving a tour bus and a flatbed semi-truck on the Pennsylvania Turnpike eastbound at mile marker 95.
12/17/2011	Vehicular Accident	Multiple vehicular accidents were reported throughout the county caused by icy road conditions. Numerous Fire Departments detoured traffic while waiting for PennDOT. Accidents were reported along Route 30, I-70, 906, 119, and others. Fire, EMS, and Police responded throughout the county.
1/29/2012	Vehicular Accident	Fatal vehicle/pedestrian accident reported on I-70 eastbound between Route 906 and North Belle Vernon Exit (Fayette Street). I-70 eastbound was closed for reconstruction.
06/10/2012	Aircraft Accident	Substantial damage to the aircraft; one person seriously injured
9/24/2012	Vehicular Accident	A vehicle accident on Route 30 eastbound between Beatty County Road and Mt. View caused downed utility poles and wires across Route 30. Fire, EMS, and Police responded.
09/29/2012	Aircraft Accident	Substantial damage to the aircraft; one minor injury
07/21/2013	Vehicular Accident	Hydrochloric Acid Spill from tanker truck shutting down I-70 for several hours until spill could be mitigated
08/07/2013	Vehicular Accident	Tractor trailer cargo truck spilled 70 barrels of drink concentrate closing State Route 30 for 24 hours.
02/13/2014	Rail Accident	Derailment of crude oil rail cars into an industrial plant and spill of crude oil requiring several months of clean up.

Source: Knowledge Center report 2006-2014; NTSB

#### 4.3.20.4 Future Occurrence

Transportation hazards are impossible to accurately predict; however, areas prone to these hazards can be located and quantified through analysis of historical records and plotted on a County-wide and municipality base maps. Certain characteristics that together cause these hazards or increase the vulnerability to these hazards can be outlined and areas that may be prone are identifiable.

Assuming that transportation accidents are as likely to occur in the future as they have occurred in the past and based on the available data, Westmoreland County can expect the following each year:

- Approximately 34 major vehicle accidents. (The actual number of vehicle accidents in Westmoreland County may be much higher; however, this figure is based on vehicle accidents captured in the Knowledge Center.)
- Approximately two bus accidents
- One to two aircraft incidents
- Four to five railroad incidents

Based on the Risk Factor Methodology Probability Criteria, the probability of a transportation accident described above is considered to be *highly likely* (see Table 4.4-1).

#### 4.3.20.5 Vulnerability Assessment

The entire County has been identified as the hazard area for transportation accidents. The following text evaluates and estimates the potential impact of transportation hazards on Westmoreland County, including:

- Overview of vulnerability;
- Data and methodology used for the evaluation;
- Impact, including (1) impact on life, safety and health, (2) general building stock, (3) critical facilities, (4) economy, and (5) future growth and development;
- Further data collections that will assist understanding of this hazard over time;
- Overall vulnerability conclusion.

##### 4.3.20.1.1 Overview of Vulnerability

Transportation systems available in the County include rail, road, and air. Hazards associated with transportation can either be created by natural hazards that affect the roadway or rail system, the material being transported, or created by the transportation medium itself.

There are heavily trafficked roadways (parkways and secondary roads) used by automobiles and trucks through the County. These roads are used by residents, commuters, and for transporting all types of materials, including hazardous materials. A major accident in each of these transportation systems is possible and could affect the County (minimal to severe).

##### 4.3.20.1.2 Data and Methodology

For this hazard, data were obtained from the County, local officials, and federal data sources. In addition, the Planning Committee has identified roadways within the County that are vulnerable to other natural hazards (flood).

##### 4.3.20.1.3 Impact on Life, Health and Safety

Potential losses from transportation hazards include human health and life, property, and natural resources. Vehicular accidents, flooded roadways, aviation accidents, and accidents at public railroad crossings at grade may result in injury or death to drivers and passengers on the road, the public in the immediate vicinity, and emergency services personnel. The number of people exposed depends on population density, both by day and night, and on the proportions located indoors and outdoors.

The County and its municipalities are prepared to manage and respond to transportation hazards.

#### 4.3.20.1.4 Impact on General Building Stock, Critical Facilities, Economy and Future Development

As a result of insufficient data, a full loss estimate was not completed for the transportation hazard. Loss of roadway use and public transportation services would affect thousands of commuters, employment, day-to-day operations within the County, and delivery of critical municipal and emergency services. Disruption of one or more of these modes of transportation can lead to the congestion of another, and not only affect the County, but the region as a whole. As discussed in Section 4.4, areas targeted for future growth and development have been identified across the County. Increased development in the County and region will contribute to increased road and rail traffic.

#### 4.3.20.1.5 Additional Data and Next Steps

Based on limited data regarding the probability and potential impact of this hazard, a quantitative loss estimate was not completed for this HMP. With time, the County can work with appropriate agencies to collect additional data to support mitigation planning and consideration of potential risks and prioritization of mitigation measures for this hazard.

It is recognized that the County needs to compile and maintain data regarding specific concerns and past losses for this hazard. These data should include specific information regarding the damage or loss of life, property, or infrastructure, and any data on the potential or actual cost and logistics of responding to such an event (location of road closures, map detours, traffic counts, duration of closures and detours; and costs to respond). These data will be included in future revisions of the HMP and can be used to support future mitigation grant efforts (benefit cost analysis).

Studying traffic and potential transportation accident patterns could provide information on the vulnerability of specific road segments and nearby populations. Increased understanding of the types of hazardous materials being transported through the Planning Area will also support mitigation efforts. By keeping a record of these frequently transported materials, preparatory measures can be made should a release occur. Costs to respond to a release, remediate the environment, or repair damaged infrastructure would be useful in studying mitigation options.

#### 4.3.20.1.6 Overall Vulnerability Assessment

While it is not possible to predict when and where a transportation accident will occur, the local fire and police departments, as well as the Pennsylvania State Police, are generally well-equipped and prepared to respond to these situations. In addition, established emergency procedures are in place, remediation would occur in a timely manner, and any infrastructure would be repaired as needed. However, these events can be costly.

In regards to vehicular accidents, data indicate that these are frequent occurrences; as traffic increases, the potential for vehicular accidents also can occur. Law enforcement, driver education, and transportation management efforts can help to reduce the potential for accidents. Existing and future mitigation efforts should continue to be developed and employed to reduce the potential impact of such events and prepare the County and local responders to these situations.

### 4.3.21 Utility Interruption

A utility interruption, or power failure, is defined as any interruption or loss of electrical service caused by disruption of power transmission caused by accident, sabotage, natural hazards, or equipment failure (also referred to as a loss of power or power outage). A significant power failure is defined as any incident of a long duration that would require the involvement of the local or State emergency management organizations to coordinate provision of food, water, heating, cooling, and shelter.

#### 4.3.21.1 Location and Extent

Utility interruptions occur throughout Westmoreland County, but are usually of small scale and short duration. Local companies, such as West Penn Power, a FirstEnergy Company that provides electricity to Westmoreland County, are capable of handling minor interruptions. Interruptions are possible anywhere there is utility service. Some utility facilities are especially vulnerable. For instance, water intakes and many water control facilities lie in the 1 percent annual chance floodplain (National Flood Insurance – Special Flood Hazard Area); a flood of this magnitude may seriously impair water service.

Interruptions in basic utilities (such as power, data/telecommunications, water, or sewer) can have a detrimental impact on Westmoreland County. Utilities that employ aboveground wiring (power and data/telecommunications) are vulnerable to the effects of other hazards such as high wind, heavy snow, ice, rain, and vehicular accidents.

#### 4.3.21.2 Range of Magnitude

Generally speaking, the most severe utility interruptions are regional power outages. Regional loss of power affects lighting, heating, ventilation, and air conditioning (HVAC) and other support equipment, communications, fire and security systems, and refrigerators, which can, in turn, cause loss of water and sewer service, and food spoilage. These effects are especially severe for individuals with functional needs and the elderly.

Westmoreland County suffered one of its most severe utility outages in February 2010, when a severe snowstorm dropped between 18 to 36 inches of heavy, wet snow throughout the county. This heavy snow fell on trees and power lines, causing downed tree limbs and wires, resulting in massive power outages. More than 27,000 residents of Westmoreland County lost power. In addition, the event caused water shortages to 35,000 county residents. Shelters and warming stations were opened throughout the region (Tribune 2010).

Sabotage also plays a role in some utility outages. Sabotage may be the direct result of a malicious attack against utilities, or may be the secondary effect of the theft of copper wiring. An October 2010 report published by the Department of Energy’s Office of Electricity Delivery and Energy Reliability, titled “An Updated Assessment of Copper Wire Theft from Electric Utilities,” reported that U.S.-based utilities suffer several million dollars’ worth of copper thefts annually. The estimated minutes of outages experienced by utilities nationwide as a result of copper theft were 456,000 or about 7,600 hours (APPA 2012).

In 2011, Westmoreland experienced the theft of large amounts of copper and phone wire on two separate occasions. State police became involved in the search for culprits who stole 125 feet of phone wire from Verizon in Unity Township and copper wire that was stolen from a power substation on Hickory Avenue in Derry Township (KDKA 2011). Copper theft continues to be an issue in Westmoreland and surrounding counties with perpetrators acting alone or with others. While no major issues have been



reported as a result of copper theft, as long as this problem persists, Westmoreland may be susceptible to theft-caused outages.

#### 4.3.21.3 Past Occurrence

Every year, Westmoreland County is susceptible to utility interruptions either through technological failure or as the result of inclement weather. Table 4.3.21-1 below shows the number of utility interruptions for the County, by type, between 2007 and 2012.

**Table 4.3.21-1: Utility Interruptions from 2007-2012**

Type	2007	2008	2009	2010	2011	2012	Total
911 Issue	1	NR	1	NR	2	NR	4
Gas	4	6	NR	1	9	3	23
Phone	2	1	3	1	4	2	13
Power	11	13	8	4	7	4	47
Sewer	1	NR	NR	NR	1	NR	2
Water	27	97	38	18	16	3	199
Wires Down	1	NR	NR	NR	NR	1	2
<b>Total</b>	<b>47</b>	<b>117</b>	<b>50</b>	<b>24</b>	<b>39</b>	<b>13</b>	<b>290</b>

Source: Pennsylvania Emergency Incident Reporting System (PEIRS); Knowledge Center, 2013  
NR: None reported

#### 4.3.21.4 Future Occurrence

Utility interruptions can happen at any time because their causes vary from minor vehicle accidents to severe weather. Table 4.3.21-2 shows the expected annual number of interruptions and the corresponding likelihood category for each type. The average was calculated based on the total number of events over a 6-year period. From there, the percent probability was assigned based on the average of incidents expected per year. Overall, utility interruptions are considered *highly likely* based on the Risk Factor Methodology Probability Criteria.

**Table 4.3.21-2: Likelihood of Future Occurrence of Utility Interruptions in Westmoreland County**

Type	Avg. #/Year	% Probability	Category*
911 Issue	1	50	Likely
Gas	4	100	Highly Likely
Phone	2	50	Likely
Power	8	100	Highly Likely
Sewer	1	50	Likely
Water	33	100	Highly Likely
Wires Down**	1	50	Likely
Overall	50	100	Highly Likely

\* See Section 4.4 for definitions of each category.

\*\* Some incidents were reported only as “wires down,” which may include power or phone transmission lines.

#### 4.3.21.5 Vulnerability Assessment

Utility interruptions most severely affect individuals with access and functional needs (for example, children, the elderly, and individuals with special medical needs). Special medical equipment will not function without power. Likewise, a loss of air conditioning during periods of extreme heat or the loss of heat during extreme cold can be especially detrimental to those with medical needs, children, and the elderly. A lack of clean, potable water has health implications for all people, and a lack of water supply may also affect the sewer system and the availability of sewer service.

All facilities considered critical infrastructure are vulnerable to utility interruptions, especially the loss of power. The establishment of reliable backup power at these facilities is extremely important to continue to provide for the health, safety, and well-being of Westmoreland County's population.

No data regarding economic impacts from utility interruptions in Westmoreland County is available. However, utility interruptions can cause economic impacts stemming from lost income, spoiled food and other goods, costs to the owners/operators of the utility facilities, and costs to government and community service groups.

## 4.4 Hazard Risk Ranking

As discussed in Section 4.2, “Hazard Identification,” a comprehensive range of natural and non-natural hazards that pose significant risk to Westmoreland County were selected and considered in this plan update. However, it is recognized that the communities in Westmoreland County have differing levels of exposure and vulnerability to each of these hazards. It is important for each community participating in this plan update to recognize those hazards that pose the greatest risk to their community and direct their attention and resources accordingly to most effectively and efficiently manage risk.

To this end, a relative hazard risk ranking process was conducted for the county using the “Risk Factor” (RF) methodology identified in Section 5 and Appendix 9 of Pennsylvania’s All-Hazard Planning Standard Operating Guide (October 2013). Per this guidance:

“The RF approach produces numerical values that allow identified hazard to be ranked against one another (the higher the RF value, the greater the hazard risk). RF values are obtained by assigning varying degrees of risk to five categories for each hazard: *probability, impact, spatial extent, warning time and duration*.

To calculate the RF value for a given hazard, the assigned risk value for each category is multiplied by the weighting factor. The sum of all five categories equals the final RF value, as demonstrated in the example equation:

### **Example Equation**

$$\text{RF Value} = [(Probability \times .30) + (Impact \times .30) + (Spatial \text{ Extent} \times .20) + (Warning \text{ Time} \times .10) + (Duration \times .10)]$$

Hazards identified as high risk have risk factors greater than or equal to 2.5. Risk Factors ranging from 2.0 to 2.4 are considered moderate risk hazards. Hazards with Risk Factors less than 2.0 are considered low risk.”

Table 4.4-1 identifies the five risk assessment categories, the criteria and associated indices used to quantify their risk, and the suggested weighting factor applied to each risk assessment category. Table 4.4.-2 then shows the categories’ values for Westmoreland County, and each hazard’s Risk Factor.

Table 4.4-1. Summary of Risk Factor (RF) Approach

Summary of Risk Factor (RF) Approach					
Risk Assessment Category	Degree of Risk			Index	Weight Value
	Level	Criteria			
<b>PROBABILITY</b> What is the likelihood of a hazard event occurring in a given year?  <b>IMPACT</b> In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs?	UNLIKELY	LESS THAN 1% ANNUAL PROBABILITY		1	30%
	POSSIBLE	BETWEEN 1% & 49.9% ANNUAL PROBABILITY		2	
	LIKELY	BETWEEN 50% & 90% ANNUAL PROBABILITY		3	
	HIGHLY LIKELY	GREATER THAN 90% ANNUAL PROBABILITY		4	
	MINOR	VERY FEW INJURIES, IF ANY. ONLY MINOR PROPERTY DAMAGE & MINIMAL DISRUPTION ON QUALITY OF LIFE. TEMPORARY SHUTDOWN OF CRITICAL FACILITIES.		1	30%
	LIMITED	MINOR INJURIES ONLY. MORE THAN 10% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN ONE DAY.		2	
	CRITICAL	MULTIPLE DEATHS/INJURIES POSSIBLE. MORE THAN 25% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN ONE WEEK.		3	
	CATASTROPHIC	HIGH NUMBER OF DEATHS/INJURIES POSSIBLE. MORE THAN 50% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR 30 DAYS OR MORE.		4	
<b>SPATIAL EXTENT</b> How large of an area could be impacted by a hazard event? Are impacts localized or regional?	NEGLECTIBLE	LESS THAN 1% OF AREA AFFECTED		1	20%
	SMALL	BETWEEN 1 & 10.9% OF AREA AFFECTED		2	
	MODERATE	BETWEEN 11 & 25% OF AREA AFFECTED		3	
	LARGE	GREATER THAN 25% OF AREA AFFECTED		4	
<b>WARNING TIME</b> Is there usually some lead time associated with the hazard event? Have warning measures been implemented?	MORE THAN 24 HRS	SELF-DEFINED	(NOTE: Levels of warning time and criteria that define them may be adjusted based on hazard addressed.)	1	10%
	12 TO 24 HRS	SELF-DEFINED		2	
	6 TO 12 HRS	SELF-DEFINED		3	
	LESS THAN 6 HRS	SELF-DEFINED		4	
<b>DURATION</b> How long does the hazard event usually last?	LESS THAN 6 HRS	SELF-DEFINED	(NOTE: Levels of warning time and criteria that define them may be adjusted based on hazard addressed.)	1	10%
	LESS THAN 24 HRS	SELF-DEFINED		2	
	LESS THAN 1 WEEK	SELF-DEFINED		3	
	MORE THAN 1 WEEK	SELF-DEFINED		4	

Source: Pennsylvania's All-Hazard Planning Standard Operating Guide (October 2013)

Table 4.4-2. Risk Ranking for Westmoreland County

HAZARD RISK	NATURAL HAZARDS	RISK ASSESSMENT CATEGORY					RISK FACTOR (RF)
		PROBABILITY	IMPACT	SPATIAL EXTENT	WARNING TIME	DURATION	
HIGH	Flood	4	3	2	1	3	2.9
	Winter Storm	3	2	4	1	3	2.7
	Tornadoes and Windstorms	3	3	2	4	1	2.7
	Subsidence and Sinkholes	3	2	3	4	1	2.6
	Drought	3	1	4	1	4	2.5
MODERATE	Extreme Temperature	3	1	4	1	3	2.4
	Radon Exposure	3	1	3	1	4	2.3
	Hailstorm	3	1	4	1	1	2.2
	Wildfire	4	1	2	1	2	2.2
	Hurricanes and Tropical Storms	2	1	4	1	2	2.0
LOW	Earthquake	1	1	4	4	1	1.9
	Lightning Strike	3	1	1	2	1	1.7
	Avalanche	1	2	1	4	1	1.6
	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	Utility Interruption	4	1	4	4	3	3.0
	Environmental Hazards	4	2	1	4	3	2.7
MODERATE	Major Structural Fires	4	1	1	4	2	2.3
	Transportation Accidents	4	1	1	4	1	2.2
LOW	Terrorism	1	3	1	4	1	1.9
	Dam Failure	1	2	1	4	2	1.7
	Nuclear Incidents	1	1	1	4	2	1.4

## SECTION 5: CAPABILITY ASSESSMENT

The capability assessment evaluates the community's capabilities and resources already in place at the municipal, county, state, and federal levels to reduce hazard risks. The assessment also identifies where improvements can be made to increase disaster resistance in the community.

To help organize a description of hazard mitigation capabilities or resources, it is useful to first describe the basic approaches available to reduce hazard risks. According to the Pennsylvania Emergency Management Agency Hazard Mitigation Planning Guide (PEMA Guide), the following six general approaches may reduce hazard risks: preventive measures, property protection, emergency service measures, structural projects, natural resource protection, and public information programs. A brief description of each (according to the PEMA Guide) is provided below.

- **Preventive measures** keep problems from getting started or getting worse and are typically administered through government programs or regulatory actions that influence the way land is developed and buildings are built. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial. Examples of preventive measures are planning (including comprehensive planning) and open space preservation or regulation (including zoning and building codes).
- **Property protection measures** involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the structures from hazardous locations. These measures include property acquisition, relocation of structures, adjusting building elevation, and floodproofing. Insurance is also considered a property protection measure.
- **Emergency service measures** are taken during a disaster to minimize its impact. They include alert warning systems, monitoring systems, emergency response planning, evacuation, and critical facilities protection.
- **Structural projects** are designed to reduce or redirect the impact of natural disasters (especially floods) away from at-risk populations. Examples include reservoirs, levees/floodwalls, channel modifications, storm sewers, and diversions.
- **Natural resource protection** preserves or restores natural areas or their natural functions. Examples include wetland protection, riparian buffers, erosion and sediment control, and riverine protection.
- **Public information programs** advise property owners, potential property owners, and others of hazards and ways to protect people and property from them. Activities can include reviewing flood maps, data, and library resources; and participating in outreach projects, technical assistance, real estate disclosure information, and environmental education programs.

Capability assessments document the existing resources available to local communities to reduce hazard risks. Resources can be divided into five categories: human, physical, technical, informational, and financial. For each basic capability or approach, there may be one or more of the five resources available to carry out the approach. A brief description of each resource (according to the PEMA Guide) is provided below.

- **Human resources** include local police, fire, ambulance, and emergency management and response personnel; local government services; and electric, gas, and other utility providers that are critical during disasters.



- **Physical resources** include the equipment and vehicles (such as emergency response and recovery equipment and vehicles), public lands, facilities, and buildings available to the community.
- **Technical/technological resources** include early warning systems, weather alert radios, stream level monitoring gauges, and 911 communications systems. They also include technical requirements established by law, regulation, or ordinance.
- **Informational resources** include materials about disasters, and hazard mitigation and planning; these are available from a wide variety of sources such as the internet, libraries, and state and federal agencies.
- **Financial resources** identify the sources of funding available for hazard mitigation. Most state and federal grant programs require local communities to provide at least part of the necessary project funding in real dollars or through in-kind services. Local communities need to assess their financial capability and resources to implement hazard mitigation action plans.

This section describes and summarizes the federal, state, county, and local capabilities to address hazard risk in Westmoreland County.

During this plan update process, Westmoreland County and all participating municipalities were surveyed to provide an updated assessment of their mitigation planning capabilities. Each municipality was provided with a Capability Assessment Survey, based on the capability assessment survey provided as Appendix 3 of the October 2010 edition of Pennsylvania's All-Hazard Mitigation Planning Standard Operating Guide (PA SOG). The survey was provided to each of the municipal planning points of contact prior to the municipal kick-off meetings, during the kick-off meetings, and throughout the planning process as needed.

Completed capability assessment surveys provided by the municipalities may be found in Appendix D.

## 5.1 Emergency Management

### 5.1.1 County Capabilities

The Westmoreland County Department of Public Safety (DPS) is a strong county-level emergency management capability that supports Westmoreland County. Westmoreland County operates an emergency 9-1-1 call center and emergency operations center (EOC) during emergencies. In addition, the County provides or supports emergency service programs and measures including emergency response, public alert and warning systems, emergency communications systems, hazard event monitoring systems, and public information and outreach programs.

#### ***9-1-1 Center***

9-1-1 is the telephone number used to report emergencies, if there is the presence or potential for an immediate threat to life or property, and response is needed by police, fire, or emergency medical service agencies. Examples include a crime which has just occurred or is in progress, odor or presence of fire, and a sick or injured person who requires treatment and possibly transportation to a hospital emergency department. The 9-1-1 system is capable of accepting calls from hearing or speech-impaired callers utilizing a Telecommunications Device for the Deaf (TDD). Each county operates a 9-1-1 Public Safety Answering Point (PSAP). These PSAPs would need to coordinate their efforts in a regional hazard event. Computerized mapping of streets with address information is critical for emergency response purposes.

Opportunities exist to streamline the regional 9-1-1 coordination through development of fully integrated, consistent mapping and databases.

### ***Emergency Operations Center (EOC)***

In the event of an impending emergency or disaster, Westmoreland County would activate their EOC. The purpose of the EOC is to manage the emergency response and coordinate the distribution of resources to a disaster incident. When the EOC is activated and becomes operational, it is staffed with highly trained experienced personnel with the authority, flexibility, imagination, and initiative needed to make command and coordination decisions (relative to their field of expertise). EOC staffing usually includes the personnel from following disciplines:

- Transportation
- Firefighting
- Communications/RACES
- Public Works and Engineering
- Emergency Management
- Mass Care/Housing and Human Services
- Resource Support
- Public Health and Medical Services
- Urban Search and Rescue
- Oil and Hazardous Materials Response
- Energy
- Public Safety and Security
- Long-Term Community Recovery and Mitigation
- Agriculture and Natural Resources
- External Affairs

When activated, the EOCs are in constant communication with the 9-1-1 centers to ensure coordination of activities.

The Westmoreland County DPS capabilities fall under two categories: emergency service measures and public information programs. These capabilities are described below.

### ***Emergency Service Measures***

Emergency service measures protect people during and immediately following a disaster.

- Emergency Alert System (EAS) – Westmoreland County participates in the EAS, which disseminates emergency information and warnings to the general public within the counties, using the resources from both broadcast and cable industries. The EAS allows state and local officials to quickly send out important area-specific state and local information, and it also recognizes the need to provide emergency information to people whose first language is not English. The EAS is capable of providing alerts in a language, such as Spanish, which is commonly used by television stations or the cable company.
- Monitoring Systems – The County monitors several systems that will disseminate emergency information and warnings. These systems include: SEVAN, Knowledge Center, PaSTAR, RACES, IFLOWS, NOAA weather radios, 800-Mhz statewide radios, VHF paging and the Mobile Command and Communication Center (MCCC) which are described below.

- The Satellite Emergency Voice Alerting Network (SEVAN) is the voice component of the satellite warning system. This allows PEMA, counties, regional offices, and cities to communicate directly in real time regardless of the status of the telephone system. Warning messages are routinely broadcast by PEMA using the system.
- Knowledge Center is a web-based interactive incident management tool that provides emergency managers with the ability to gather large quantities of information related to incidents, and then to coordinate that information with the proper agencies. For small-scale events, one or two responder agencies would be contacted, and for large-scale events that involve complex, multi-jurisdictional responses, hundreds of agencies from the local, state, federal, non-governmental, and private sector organizations may be contacted. The system allows for seamless communication with neighboring jurisdictions, counties, and the state about the types of incidents and emergencies occurring.
- The Pennsylvania Statewide Telecommunication and Alerting System (PaSTAR) is a computer network that uses satellite-based technology and the latest computer server and client systems. The system allows data sharing, reporting, and textual and graphics communications to flow unimpaired between users connected to the system. The core of PaSTAR consists of a commercially available computer server and email software packages.
- The Radio Amateur Civil Emergency Services (RACES) is a group of amateur radio operators who donate their services in time of natural disaster or emergency. They provide communication to fire, police, and other agencies that need assistance.
- The Integrated Flood Observing and Warning System (IFLOWS) relies on a radio system that reports rain, and stream gauges that provide rainfall and stream-level data through radio and satellite frequencies. This data is transmitted to counties, Pennsylvania EOC, PEMA offices, and the National Weather Service (NWS) serving Pennsylvania. Actual rainfall is compared with NWS Flash Flood Guidance (FFG), and alarms are triggered at various preset levels according to the FFG. The FFG estimates the number of inches of rainfall for given durations required to produce flash flooding in the counties. These estimates are based on current soil moisture conditions, but it should be noted that in urban areas, less rainfall is required to produce flash flooding. The IFLOWS computer is alarmed with both audible and visual signals that are transmitted to counties and all sites on the satellite network when rainfall or stream levels may lead to flash flooding.
- NOAA Weather Radio (NWR) All Hazards Network is a nationwide network of radio stations broadcasting continuous weather information directly from a nearby NWS office. NWR broadcasts NWS warnings, watches, forecasts, and other hazard information 24 hours a day. NWR also broadcasts warning and post-event information for all types of hazards, including natural and man-made (such as chemical releases or oil spills) and public safety (such as AMBER alerts or 9-1-1 telephone outages).
- The 800-Mhz radio system provides two-way voice and data communications for all county and state agencies. The primary function of this system is to provide redundant communications between the county and the partner agency facilities in the event that the primary means of communication becomes interrupted.
- VHF emergency paging – Westmoreland County utilizes a VHF paging system to alert emergency personnel (i.e. Fire, EMS and emergency coordinators) of an incident occurring within Westmoreland County.

- Mobile Command and Communications Center (MCCC) – When emergencies, natural and human-caused or special events requiring on-site incident command occur in Westmoreland County, the MCCC becomes a vital component to the response mission. The MCCC can operate independently or in conjunction with the County Emergency Operations Center (EOC). The primary function of the MCCC is to support the direction, management, and employment of emergency services and resources in Westmoreland County.

### ***Emergency Response Planning***

- The Emergency Operations Plan (EOP) prepared by Westmoreland County documents the county’s emergency preparedness planning. The EOP includes county-specific emergency response procedures during significant emergency events. Westmoreland County annually reviews and continually updates the EOP, as needed. The following annexes are included in the Westmoreland EOP:
  - Radiological Emergencies
  - Hazardous Materials
  - Dam Failure
  - Terrorism
  - Regional Terrorism Incident Operations Plan
  - Special Events Plan
  - Prison Plan
  - School Plans
  - Continuity of Government Plans
  - PA Region 13 MMRS (Metropolitan Medical Response System) Plan
  - Mobile Command and Communication Center (MCCC) Field Operations Plan
- Westmoreland County has mutual aid agreements (formal agreements) with the contiguous Pennsylvania counties as a result of the Pennsylvania Intrastate Mutual Assistance Program. Every county in the state participates in this program. Westmoreland County is also part of a larger county consortium, the PA Region 13 Counter-terrorism Task Force that work together and share resources during times of emergency. This unprecedented intergovernmental agreement is between the following entities:
  - Allegheny County
  - Armstrong County
  - Beaver County
  - Butler County
  - Cambria County
  - Fayette County
  - Greene County
  - Indiana County
  - Lawrence County
  - Mercer County
  - Somerset County
  - Washington County
  - Westmoreland County
  - City of Pittsburgh
- The counties also assist in planning and preparation for the following:

- Local (Municipal) Emergency Operation Plans
  - Medical facilities
  - Dams
  - Airports
  - Pandemic
  - Mass casualty/fatality incidents
  - Counterterrorism preparedness
  - Special events, such as concerts, parades, etc.
  - School emergency planning
  - Day care, group homes, and special needs facilities
  - Evacuation and Detour Plan
  - SARA (Superfund Amendments and Reauthorization Act of 1986) – The Local Emergency Planning Committee program is based upon the SARA 1986, Title III. This legislation requires local planning by businesses and response agencies (such as fire departments and hazardous materials teams) whenever hazardous materials are involved. SARA also requires the establishment of a system in each community that informs the citizens of chemicals used, manufactured, and stored locally.
- In cooperation with the American Red Cross, the counties have set up designated shelters that may be used during emergencies and disasters. The County, in cooperation with various partners, also establishes Heating and Cooling Centers during extreme temperature events.

### ***Public Information Programs***

- Flood maps and flood data are accessible to the County through their GIS departments, and other information is available through the County assessment offices. The following information is available through the County GIS offices: county and municipality maps, tax maps, village rate schedules, property assessment records, and deeds.
- Libraries have educational materials available upon request that are used at public speaking events or County meetings, when appropriate. The following educational materials are available, but are not limited to:
  - Various types of training videos
  - Pennsylvania Emergency Preparedness Guides
  - American Red Cross Packets for Flash Flooding, Hurricane, Thunder and Lightning, Tornado, Winter Storms
  - Family Disaster Planning Guides
  - Homeland Security Information for Businesses, Family, Individuals, Neighborhoods and Schools
  - Pandemic Brochures
- Various types of public awareness information are provided on the Region 13 website <http://www.pa-region13.org/default.asp>. The following educational materials are available:
  - Disaster Awareness
 

- Biological Threat	- Extreme Heat
- Chemical Threat	- Fire
- Cyber Security	- Flooding
- Earthquake	- Hurricane
- Explosion	- Landslide
- Extreme Cold	- Mass Transit

- Power Outage
- Public Health
- Radiation Threat
- Terrorism
- Tornado
- Tsunami
- Be Prepared
  - Evacuation
  - Household Disaster Plan
  - Shelter-in-Place
  - Special Needs
  - Emergency Supply Kit
  - Utility shutoff
- Outreach Projects
  - TV Media Public Awareness Campaign – This program aims for Westmoreland County to collaborate with the local media to disseminate information on severe weather and storm related preparedness to the general public.
  - Utility Public Awareness Campaign - The following utility agencies have available safety information accessible to the public:
    - West Penn Power <https://www.firstenergycorp.com/content/customer/help/safety.html>
    - Peoples Natural Gas  
<http://www.peoples-gas.com/Safety.aspx>
    - Columbia Natural Gas  
<https://www.columbiagaspa.com/stay-safe>
    - Municipal Authority of Westmoreland County  
<http://www.mawc.org/content/CustServWater/public-notification>
  - Are You Ready? – This is an in-depth program for citizen preparedness (individual, family and community preparedness) that provides a step-by-step approach to disaster preparedness by walking the student through how to get informed about local emergency plans, how to identify hazards that affect their area, and how to develop and maintain an emergency communications plan and disaster supply kit. Other topics include evacuation, emergency public shelters, animal handling during disasters, and information specific to people with disabilities. The program includes what to do before, during, and after each hazard type and provides in-depth information on specific hazards such as the following:
    - Floods
    - Tornadoes
    - Hurricanes
    - Thunderstorms and lightning
    - Winter storms and extreme cold
    - Extreme heat
    - Earthquakes
    - Volcanoes
    - Landslide and debris flows (mudslide)
    - Tsunamis
    - Fires and wildfires
    - Hazardous materials incidents
    - Household chemical emergencies
    - Nuclear power plants
    - Terrorism (explosion, biological, chemical, nuclear, and radiological hazards)



- ReadyPA Campaign – Established by the Commonwealth of Pennsylvania, [www.ready.pa.org](http://www.ready.pa.org) is a website that aims to prepare the public for times of disaster by providing education on the risks within Pennsylvania, template emergency plans and kits, and information on how to get involved with community organizations to help others.
- Community Emergency Response Teams (CERT) – Training to educate citizens about disaster preparedness and training in basic disaster response skills, such as fire suppression, medical operations during disasters, light search and rescue, team organization, disaster psychology, and terrorism awareness. The goal of this program is for emergency personnel to train members of neighborhoods, community organizations, or workplaces in basic response skills. If a disastrous event overwhelms or delays the community's professional response, CERT members can assist others by applying the basic response and organizational skills that they learned during training. These skills can help save and sustain lives following a disaster until help arrives.
- Citizen Corps Council – The mission of the Citizen Corps is to harness the power of every individual through education, training, and volunteer service to make communities safer, stronger, and better prepared to respond to the threats of terrorism, crime, public health issues, and disasters of all kinds.
- Emergency Management Courses are provided through the County DPS to local coordinators and elected officials. The following courses are provided: Duties and Responsibilities of the Local Emergency Management Coordinator (LEMC), Elected Officials Seminar, Initial Damage Assessment, Safe Schools Training, National Incident Management System, Work Environment of the LEMC, and numerous FEMA Independent Study Courses.
- Local Emergency Planning Committee (LEPC) – Working closely with the business industry community to form a safety net around the chemical industry to protect the general population from the possible outcome of hazardous material incidents.
  - The LEPC shall have a minimum of seven members, and will include at least one representative of each of the following groups:
    - Group 1 – Elected Official representing local government within the county
    - Group 2 – Local law enforcement, first aid, health, environmental, hospital, and transportation personnel
    - Group 3 – Firefighting personnel
    - Group 4 – Civil defense and emergency management personnel
    - Group 5 – Broadcast and print media
    - Group 6 – Community groups not affiliated with emergency service groups
    - Group 7 – Owners and operators of facilities subject to the requirements of SARA Title III
  - Reporting Facilities – Hazardous Chemicals for which facilities are required to have or prepare a Material Safety Data Sheet, the minimum reporting threshold is 10,000 pounds.
  - Planning Facilities – Extremely Hazardous Substances designated under Section 302 of Title III, the reporting threshold is 500 pounds or the threshold planning quantity, whichever is lower.

- LEPC Safety Bulletins – Safety bulletins have been distributed to Superfund Amendment Reauthorization Act (SARA) Tier II reporting facilities residing in Westmoreland County since 2007. The bulletins are intended to offer information relative to timely and critical public safety issues for SARA reporting facility emergency coordinators. The information is made available for the intended use of addressing known and recognized public safety issues that become available to the Westmoreland County HAZMAT Coordinator through emergency management venues from time to time. The information is ONLY an information service document and not a policy or initiative to change existing procedures at any facility, industry, institution, or other entity.
- Community Awareness Program – Westmoreland County also provides the following awareness information to the LEPC to disseminate to communities surrounding their planning/reporting facilities: <http://usa.arcelormittal.com/Corporate-responsibility/Community/Stakeholder-engagement/>
- SARA Safety Summit – The LEPC hosts a safety summit on a yearly basis, in which all Tier II reporting and planning facilities are invited to attend. Westmoreland County has the following number of SARA planning and reporting facilities:
  - 78 SARA Planning Facilities
  - 339 SARA Reporting Facilities
- Technical Assistance – The county DPS offices can support local, public, and private entities as needed through coordination and provision of information and equipment resources. These include both existing county capabilities, such as the County Hazardous Materials Response Team and Technical Rescue Team, and predetermined private and public resources.
- Elected Officials Seminar – The county DPS conducts a day long training to educate elected officials on their roles and responsibilities during times of disaster in regards to public safety and emergency management.

### ***Geographic Information Systems***

Westmoreland County Department of Geographic Information Systems (GIS) has enabled the Department of Public Safety (DPS) to multiply its force through interactive mapping technologies, and high resolution aerial photography. These resources allow decision makers and stakeholders to identify, mitigate, respond to, and recover from disasters. These systems acting as the common operating picture combining together six general approaches that may reduce hazard risks, should a disaster of significant magnitude occur and photography of an affected area is warranted. A new aerial photography project may be flown in order to capture the devastation under certain criteria. This would allow for enhanced coordination of response and recovery from major incidents.

### **5.1.2 Local Capabilities**

According to Pennsylvania Title 35 (Emergency Management Services Code), Chapter 7500, the following apply:

- Each political subdivision of this Commonwealth is directed and authorized to establish a local emergency management organization in accordance with the plan and program of PEMA. Each

local organization shall have responsibility for emergency, response, and recovery within the territorial limits of the political subdivision within which it is organized and, in addition, shall conduct such services outside of its jurisdictional limits as may be required under this part.

- Declaration of disaster emergency – A local disaster emergency may be declared by the governing body of a political subdivision upon finding a disaster has occurred or is imminent. The effect of a declaration of a local disaster emergency is to activate the response and recovery aspects of any and all applicable local emergency management plans and to authorize the furnishing of aid and assistance.
- Each local organization of emergency management shall have a coordinator who shall be responsible for the planning, administration and operation of the local organization.
- Each political subdivision shall adopt an Intergovernmental Cooperation agreement with other political subdivisions to:
  - Prepare, maintain, and keep current a disaster emergency management plan for the prevention and minimization of injury and damage caused by disaster, prompt and effective response to disaster, and disaster emergency relief and recovery in consonance with the Pennsylvania Emergency Management Plan.
  - Establish, equip and staff an emergency operations center, consolidated with warning and communication systems to support government operations in emergencies, and provide other essential facilities and equipment for agencies and activities assigned emergency functions.
  - Provide individual and organizational training programs to ensure prompt, efficient, and effective disaster emergency services.
  - Organize, prepare, and coordinate all locally available manpower, materials, supplies, equipment, facilities and services necessary for disaster emergency readiness, response, and recovery.
  - Adopt and implement precautionary measures to mitigate the anticipated effects of a disaster. Execute and enforce such rules and orders as the agency shall adopt and promulgate under the authority of this part.
  - Cooperate and coordinate with any public and private agency or entity in achieving any purpose of this part.
  - Have available for inspection at its emergency operations center all emergency management plans, rules and orders of the Governor and the agency.
  - Provide prompt and accurate information regarding local disaster emergencies to appropriate Commonwealth and local officials and agencies and the general public.
  - Participate in all tests, drills, and exercises, including remedial drills and exercises, scheduled by the agency or by the federal government.
  - Participate in the program of integrated flood warning systems under section 7313 (6) (relating to powers and duties).

- Direction of disaster emergency management services is the responsibility of the lowest level of government affected. When two or more political subdivisions within a county are affected, the county organization shall exercise responsibility for coordination and support to the area of operations. When two or more counties are involved, coordination shall be provided by PEMA or by area organizations established by PEMA.
- When all appropriate locally available forces and resources are fully committed by the affected political subdivision, assistance from a higher level of government shall be provided.
- Local coordinators of emergency management shall develop mutual aid agreements with adjacent political subdivisions for reciprocal emergency assistance. The agreements shall be consistent with the plans and programs of PEMA.

The local municipalities in Westmoreland County have the following capabilities:

### ***Mutual Aid Agreements***

Westmoreland County has formal mutual aid agreements with 65 of its municipalities. Mutual Aid is covered under Act 93.

### ***Emergency Operations Centers (EOC)***

In the event of an impending emergency or disaster, the local EOC may be activated. The purpose of the EOC is to manage the emergency response and coordinate distribution of resources to a disaster incident at the local level.

### ***Emergency Response***

Each municipality is responsible for providing emergency response to their municipality consisting of emergency medical services (EMS), fire, and police. If a municipality does not have one of these providers in their community, they have mutual aid agreements with an adjacent political subdivision to provide such.

### ***Monitoring Systems***

The municipalities may also be equipped with several systems to monitor emergency information and warnings, including RACES, NWS, and Knowledge Center, which have been previously described.

### ***Emergency Response Planning***

The municipalities may also assist with planning for:

- Municipal Emergency Operations Plan (EOP)
- Medical facilities
- Dams
- Counterterrorism preparedness
- Special events
- School emergency planning
- Day care, group homes, and special needs facilities
- Evacuation

A summary of existing federal, state, regional, and county programs (regulatory and otherwise) to manage specific hazard risks may be found in the hazard profiles in Section 4 of this plan update. While the risk

of certain hazards can be addressed at least partially through mitigation, the risks of other hazards (particularly certain non-natural hazards) are primarily managed through the preparedness and response elements of emergency management, or through other regulatory programs at the federal and state levels.

## 5.2 Participation in the National Flood Insurance Program

According to FEMA's 2002 National Flood Insurance Program (NFIP): Program Description, the U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968. The NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages.

Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction and substantial improvements in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods (FEMA 2002).

Currently, all municipalities in Westmoreland County participate in the NFIP, with no municipalities having outstanding sanctions or suspensions. All municipalities have adopted a Flood Damage Prevention Ordinance which is enforced locally by their floodplain administrator, and make current NFIP Flood Insurance Rate Maps (FIRMs) available for review by the public.

NFIP-participating communities in Westmoreland County are required to adopt a Flood Damage Prevention Ordinance, and update this ordinance whenever the regulatory NFIP FIRMs are officially updated. Both the Westmoreland County Planning Department and the Pennsylvania Department of Community and Economic Development (state coordinating agency for the NFIP) provide support to municipalities by providing model Flood Damage Prevention Ordinances.

NFIP-participating communities in Westmoreland County are required to make current regulatory NFIP mapping available to their residents for review, and may provide mapping assistance through their floodplain administrators. Typically this mapping is available at the municipal offices in each community.

At the time this plan was written, the Westmoreland County FEMA Digitized Flood Insurance Rate Maps (DFIRMs) dated 2011 were used to evaluate exposure and determine potential future losses.

Municipal participation in and compliance with the NFIP is supported at the federal level by FEMA Region III and the Insurance Services Organization (ISO), and at the state level by the Pennsylvania Department of Environmental Protection (PADEP) and PEMA. Regionally, each county's emergency management department supports flood mitigation efforts as well as associated training and public education and awareness programs.

Flood hazard risk management in Westmoreland County is further supported by the intention to complete a Phase II Stormwater Management Plan, which would include stormwater runoff modeling for each of the 11 watersheds in Westmoreland County and would lead to ways to address the runoff in those watersheds. In turn, the development of this plan would hopefully reduce the effects of flooding in certain areas of the County. Additional information regarding this Phase II project is found in Section 5.4.2 of this document.

Additional information on the NFIP program and its implementation within the County may be found in the flood hazard profile (Section 4.3.5).

### 5.3 Community Rating System (CRS)

In the 1990s, the Flood Insurance Administration (FIA) established the CRS to encourage local governments to increase their standards for floodplain development. The goal of the program is to encourage communities, through flood insurance rate adjustments, to implement standards above and beyond the minimum required in order to:

- Reduce losses from floods
- Facilitate accurate insurance ratings
- Promote public awareness of the availability of flood insurance

CRS is a voluntary program designed to reward participating jurisdictions for their efforts to create more disaster-resistant communities using the principles of sustainable development and management. By enrolling in CRS, municipalities can leverage greater flood protection while receiving flood insurance discounts.

Currently, no municipalities in Westmoreland County participate in the CRS. Increased participation will be supported by the County, and promoted through the local emergency management coordinator as identified in the updated mitigation strategies.

### 5.4 Planning and Regulatory Capability

While municipalities in Pennsylvania must comply with the minimum regulatory requirements established under the Pennsylvania Municipal Planning Code, they otherwise have considerable latitude in adopting ordinances, policies, and programs that can support their ability to manage natural and non-natural hazard risk. Specifically, municipalities can manage these risks through comprehensive land use planning, hazard-specific ordinances (e.g. flood damage prevention, sinkholes, and steep slopes), zoning, site-plan approval, and building codes.

#### 5.4.1 Westmoreland County Comprehensive Plan

The Westmoreland County Comprehensive Plan grew out of a need to analyze and consolidate the numerous detailed and well-developed plans for an overall picture of Westmoreland County. This plan is a guidance document for future growth and development in Westmoreland County. It analyzes the trends, changes, and conditions of the population, economics, housing, environment, infrastructure, and other areas. It then assesses the strengths, weaknesses, opportunities, and threats. It also establishes a vision for future growth and formulates goals and strategies to implement that vision. The purpose of the plan is to guide the orderly growth in Westmoreland County while promoting the conservation of farmland and natural resources including streams and floodplains, riparian buffers, wetlands, important natural areas, steep slopes, and woodlands. The plan recommends that new industrial or residential growth should not locate in areas recommended for natural resource or farmland protection. Higher-density residential growth, and industrial and business expansion should take place in the recommended urban areas. The plan identifies goals, policies, and a number of implementation strategies for a variety of topics including land use, housing, natural resources, farmland preservation, economic development, transportation, community utilities (water, wastewater and stormwater), parks and recreation, and historic preservation. Although the Pennsylvania Municipalities Planning Code requires that municipal plans be in



accord with the county plan, the code provides no measures for ensuring that this occurs. Most municipalities have adopted their own comprehensive plan.

#### 5.4.2 Stormwater Management Planning

In 1978, the Pennsylvania General Assembly passed the Stormwater Management Act (Act 167) of 1978. Act 167 requires counties to prepare stormwater management plans on a watershed-by-watershed basis. The plans must be developed in consultation with the affected municipalities. Standards for control of runoff from new development are a required component of each plan and are based on a detailed hydrologic assessment. A key objective of each plan is to coordinate the stormwater management decisions of the watershed municipalities. Implementation of each plan is through mandatory municipal adoption of ordinance provisions consistent with the plan.

Plans prepared under Act 167 will not resolve all drainage issues. A key goal of the planning process is to maintain existing peak runoff rates throughout a watershed as land development continues to take place. This process does not solve existing flooding problems although it should prevent these problems from getting worse. Each municipality is responsible for correcting existing flooding problems.

Phase I of the Stormwater Management Plan for Westmoreland County was completed in 2010 and the report was developed in accordance with requirements outlined by Act 167. Phase I included the scope of study for future stormwater management planning efforts, and outlined the logistics of developing and implementing Phase II based on the results of the Phase I report. Funding for Phase I was acquired through the Pennsylvania Department of Environmental Protection and included a summary of watershed characteristics, an inventory of relevant problems, and a proposed scope of study, schedule, and budget for completion of the Phase II project. Additionally, during Phase I, a Watershed Plan Advisory Committee (WPAC) was formed, which consisted of County and municipal representatives. The WPAC served as the advisory panel during Phase I development and will continue to serve as such in future stormwater management activities.

Phase I successfully augmented municipal and County stormwater management planning initiatives in order to maintain a thorough and consistent overview of stormwater management issues and recommended actions throughout the County. Referenced plans included the following:

- The Westmoreland County Comprehensive Plan
- Subdivision and Land Development Ordinance of the County of Westmoreland
- Sewickley Creek Watershed Conservation Plan
- Tubmill Creek Watershed Protection and Restoration Project
- The Natural Heritage Inventory
- Kiski Conemaugh Basin Greenway Feasibility Study
- Turtle Creek Watershed Act 167 Stormwater Management Plan
- Macroinvertebrate Study
- Loyalhanna Watershed Assessment and Restoration Plan

Phase I of the Stormwater Management Plan provided the groundwork for future planning initiatives associated with stormwater management, which would be completed under Phase II. Funding has not yet been acquired to begin Phase II of the Stormwater Management Plan.

### 5.4.3 Water Supply Planning

Westmoreland County has developed the Water Shortage Response Plan to establish measures for essential conservation of water resources, and to provide for equitable distribution of limited water supplies, in order to balance demand and limited available supplies. The Plan ensures that sufficient water is available to preserve public health and safety within the service area of the Municipal Authority of Westmoreland County (MAWC) during periods of drought, supply contamination, water system physical or mechanical failure, or shortages for any other current or anticipated reason. The local Water Shortage Response Plan establishes conservation measures to complement water restrictions or ban orders as issued by officials at the county, state, or federal level.

### 5.4.4 Natural Resource Planning

Westmoreland County has prepared several documents related to natural resource planning. *New Horizons: A County-wide Greenways and Blueways Network* serves as a companion document to the Comprehensive Plan relevant to initiatives and issues related to the County's land use, parks, recreation, and open space planning efforts.

In addition to the Comprehensive Plan and associated documents, Westmoreland County completed the National Heritage Inventory. The Natural Heritage Inventory identifies and maps Westmoreland County's most significant natural places. The study investigates plant and animal species and natural communities that are unique or uncommon in the County; it also explores areas important for general wildlife habitat and scientific study. While the Inventory does not discuss protecting specific natural resource areas, it provides vital information to those County individuals responsible for decision making.

### 5.4.5 Open Space Planning

Westmoreland County has prepared several plans with the goal of preserving open space in the County for recreational and environmental purposes. These plans include the Parks and Horizons Plan (2000) and the Greenways and Open Space Plan (2008). A greenway is a corridor of open space. The plan identifies conservation, cultural/recreational, conservation/cultural and scenic greenways and evaluates how local ordinances may protect greenways.

The Steering Committee will comment on open space issues identified in these plans during project reviews.

### 5.4.6 Informational Resources

Westmoreland County has a variety of informational resources available to the public. Many of the publications discussed previously are available for review by the public on the Westmoreland County website: <http://www.co.westmoreland.pa.us/>. Westmoreland County also responds to floodplain information requests from the public. The County has sponsored seminars related to stormwater management, floodplain issues, model environmental ordinances, and basic courses in subdivision review and zoning, as well as a basic course for planning commissioners.

It is noted that Westmoreland County, and many of the municipalities, have identified specific mitigation initiatives in this plan update to help build and enhance mitigation-related planning and regulatory capabilities in Westmoreland County.

#### 5.4.7 Municipal Capabilities

Participating municipalities in this planning effort were provided a capabilities survey. This section summarizes the responses of the municipalities based on Planning and Regulatory Capability (Table 5.1.3-1). Copies of the individual municipal responses are found in Appendix D.

Table 5.4-1: Planning and Regulatory Capability

Municipality	Hazard Mitigation Plan	EOP	Disaster Recovery Plan	Evacuation Plan	COOP Plan	NFIP	NFIP – CRS	Floodplain Regulations	Floodplain Mgmt. Plan	Zoning Regulations	Subdivision Regulations	Comprehensive Land Use Plan (or General, Master, or Growth Mgmt. Plan)	Open Space Mgmt. Plan	Stormwater Mgmt. Plan/Ordinance	Natural Resource Protection Plan	Capital Improvements Plan	Economic Dev. Plan	Historic Preservation Plan	Farmland Preservation	Building Code	Fire Code	Firewise	Storm Ready	Other
Adamsburg						X																		
Allegheny Township						X																		
Arnold						X																		
Arona						X																		
Avonmore	U	X	-	X	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	X	-	-	-	-
Bell Township						X																		
Bolivar						X																		
Cook Township						X																		
Delmont	U	X	U	U	U	X	U	X	X	X	X	U	U	X	U	U	U	U	U	X	X	-	-	-
Derry						X																		
Derry Township						X																		
Donegal Borough	U	U	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Donegal Township	-	X	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
East Huntingdon	X	X	-	-	-	X	-	X	-	-	X	-	-	X	-	-	-	-	X	-	-	-	-	-
East Vandergrift						X																		
Export						X																		
Fairfield Township	X	X	X	X	-	X	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greensburg	X	X	U	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-



Municipality	Hazard Mitigation Plan	EOP	Disaster Recovery Plan	Evacuation Plan	COOP Plan	NFIP	NFIP – CRS	Floodplain Regulations	Floodplain Mgmt. Plan	Zoning Regulations	Subdivision Regulations	Comprehensive Land Use Plan (or General, Master, or Growth Mgmt. Plan)	Open Space Mgmt. Plan	Stormwater Mgmt. Plan/Ordinance	Natural Resource Protection Plan	Capital Improvements Plan	Economic Dev. Plan	Historic Preservation Plan	Farmland Preservation	Building Code	Fire Code	Firewise	Storm Ready	Other	
Hempfield Township	X	X	U	X	U	-	-	X	-	X	X	X	-	X	-	-	-	-	-	X	U	-	U	-	
Hunker																									
Hyde Park																									
Irwin	U	-	-	-	-	X	-	X	-	X	X	X	-	X	-	X	-	-	-	X	-	-	-	-	
Jeannette																									
Latrobe																									
Laurel Mountain																									
Ligonier	X	X	-	-	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	X	-	-	-	-	
Ligonier Township																									
Lower Burrell																									
Loyalhanna Township																									
Madison																									
Manor	X	U	-	-	-	X	-	-	X	X	X	X	-	X	-	-	-	-	-	X	-	-	X	-	
Monessen																									
Mount Pleasant																									
Mount Pleasant Twp.																									
Murrysville	X	X	-	-	-	X	X	X	X	X	X	X	X	X	-	X	-	-	-	X	X	X	-	-	-
New Alexandria	U	X	-	-	-	X	-	-	-	X	-	-	-	U	-	-	-	-	-	X	-	-	-	-	
New Florence																									



Municipality	Hazard Mitigation Plan	EOP	Disaster Recovery Plan	Evacuation Plan	COOP Plan	NFIP	NFIP – CRS	Floodplain Regulations	Floodplain Mgmt. Plan	Zoning Regulations	Subdivision Regulations	Comprehensive Land Use Plan (or General, Master, or Growth Mgmt. Plan)	Open Space Mgmt. Plan	Stormwater Mgmt. Plan/Ordinance	Natural Resource Protection Plan	Capital Improvements Plan	Economic Dev. Plan	Historic Preservation Plan	Farmland Preservation	Building Code	Fire Code	Firewise	Storm Ready	Other	
New Kensington																									
New Stanton	X	-	-	-	-	X	-	X	-	X	X	X	-	X	-	-	-	-	-	X	X	-	-	-	
North Belle Vernon																									
North Huntingdon Township																									
North Irwin																									
Oklahoma	-	-	-	-	-	X	-	-	-	X	X	-	-	-	-	-	-	-	-	X	-	-	-	-	
Penn																									
Penn Township	-	X	-	X	-	X	-	-	X	X	X	X	X	X	-	X	-	-	X	X	X	X	-	-	-
Rostraver Township																									
Salem Township	-	X	-	-	-	X	-	-	-	-	X	X	-	X	-	-	-	-	X	X	X	-	X	-	
Scottdale																									
Seward																									
Sewickley Township																									
Smithton																									
South Greensburg																									
South Huntingdon																									
Southwest Greensburg																									
St. Clair Township	U	-	-	-	-	X	-	X	X	-	-	-	-	-	-	-	-	-	-	X-	-	-	-	-	





Municipality	Hazard Mitigation Plan	EOP	Disaster Recovery Plan	Evacuation Plan	COOP Plan	NFIP	NFIP – CRS	Floodplain Regulations	Floodplain Mgmt. Plan	Zoning Regulations	Subdivision Regulations	Comprehensive Land Use Plan (or General, Master, or Growth Mgmt. Plan)	Open Space Mgmt. Plan	Stormwater Mgmt. Plan/Ordinance	Natural Resource Protection Plan	Capital Improvements Plan	Economic Dev. Plan	Historic Preservation Plan	Farmland Preservation	Building Code	Fire Code	Firewise	Storm Ready	Other
Sutersville																								
Trafford																								
Unity Township																								
Upper Burrell	X	X	-	-	-	X	X	X	X	X	-	-	-	X	-	-	-	-	-	X	-	-	-	-
Vandergrift																								
Washington Township	U	X	-	-	-	X	-	-	-	-	X	X	-	X	-	-	-	-	-	X	X	-	-	-
West Leechburg																								
West Newton																								
Youngstown																								
Youngwood																								

Note: The “X” indicates that the municipality currently has this capability in place. A “U” indicates that this capability is currently under development by the municipality. A “-” indicates no capability is currently in place, and a blank space indicates no response was received from the municipality. For detailed information, please refer to the municipal survey responses located in Appendix D.

## 5.5 Administrative and Technical Capability

Specific administrative and technical capabilities available at the local levels are identified in Table 5.5-1 below.

Municipalities are further supported by county, regional, state and federal administrative and technical capabilities. For this hazard mitigation plan, the majority of support agencies and resources have been identified and referenced throughout this plan update.

It is noted that the County and many of its municipalities have identified specific mitigation initiatives described in this plan update, which will help build and enhance mitigation-related administrative and technical capabilities in Westmoreland County.

### 5.5.1 Municipal Capabilities

Participating municipalities in this planning effort were provided with a capabilities survey. This section summarizes the responses of the municipalities based on Administrative and Technical Capability (Table 5.5-1); Copies of the individual municipal responses are found in Appendix D.

Table 5.5-1: Administrative and Technical Ability

Municipality	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	Emergency Manager	NFIP Floodplain Administrator	Land Surveyors	Scientists or Staff familiar with the hazards of the community	Personnel skilled in 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
Adamsburg											
Allegheny Township											
Arnold											
Arona											
Avonmore	X	X	X	X	X	X	X	X	-	-	-
Bell Township											
Bolivar											
Cook Township											
Delmont	X	-	X	X	X	X	-	X	X	X	-
Derry											
Derry Township											
Donegal Borough	-	-	X	X	-	-	-	-	-	-	-
Donegal Township	-	-	-	X	X	-	-	-	-	-	-
East Huntingdon	-	-	-	-	-	-	-	-	-	-	-
East Vandergrift											
Export											



Municipality	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	Emergency Manager	NFIP Floodplain Administrator	Land Surveyors	Scientists or Staff familiar with the hazards of the community	Personnel skilled in 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
Fairfield Township	-	-	-	X	-	-	-	-	-	-	-
Greensburg	X	X	-	-	-	X	-	X	X	-	-
Hempfield Township	X	-	X	X	X	-	X	X	-	X	-
Hunker											
Hyde Park											
Irwin		X	X		X	X					
Jeannette											
Latrobe											
Laurel Mountain											
Ligonier	-	-	-	-	X	-	-	X	-	-	
Ligonier Township											
Lower Burrell											
Loyalhanna Township											
Madison											
Manor	X	X	X	X	X	X	-	-	-	-	-
Monessen											
Mount Pleasant											
Mount Pleasant Twp.											
Murrysville	X	-	X	X	X	X	-	X	X	X	-

Municipality	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	Emergency Manager	NFIP Floodplain Administrator	Land Surveyors	Scientists or Staff familiar with the hazards of the community	Personnel skilled in 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
New Alexandria	-	-	-	X	X	-	-	X	-	-	-
New Florence											
New Kensington											
New Stanton	X	X	X	-	X	X	X	X	-	-	-
North Belle Vernon											
North Huntingdon Township	-	-	-	-	-	-	-	-	-	-	-
North Irwin											
Oklahoma	-	X	-	-	-	-	-	-	-	-	-
Penn											
Penn Township	X	-	X	X	X	-	X	-	X	-	-
Rostraver Township											
Salem Township	-	-	X	X	-	-	-	-	-	-	-
Scottdale											
Seward											
Sewickley Township											
Smithton											
South Greensburg											
South Huntingdon											



Municipality	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	Emergency Manager	NFIP Floodplain Administrator	Land Surveyors	Scientists or Staff familiar with the hazards of the community	Personnel skilled in 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
Southwest Greensburg											
St. Clair Township											
Sutersville											
Trafford											
Unity Township											
Upper Burrell	X	X	X	X	X	-	-	-	-	-	-
Vandergrift											
Washington Township	X	X	X	X	X	-	-	X	-	-	-
West Leechburg											
West Newton											
Youngstown											
Youngwood											

Note: The “X” indicates that the municipality currently has this capability in place. A “-” indicates no capability is currently in place, and a blank space indicates no response was received from the municipality. For detailed information, please refer to the municipal survey responses located in Appendix D.





## 5.6 Fiscal Capability

Mitigation projects and initiatives are largely or entirely dependent on available funding. As such, it is critical to identify all available sources of funding at the local, county, regional, state and federal level to support implementation of the mitigation strategies identified in this plan update.

Jurisdictions fund mitigation projects through existing local budgets, local appropriations (including referendums and bonding), and through myriad federal and state loan and grant programs.

Federal mitigation grant funding (Stafford Act 404 and 406) is available to all communities with a current hazard mitigation plan (this plan); however most of these grants require a “local share” in the range of 10 percent to 25 percent of the total grant amount.

### 5.6.1 Capital Improvement Planning

Westmoreland County and many municipalities have capital improvement plans in place, identifying specific capital projects to be funded and completed according to a defined schedule. Some of these projects involve improvements to facilities and infrastructure that provide hazard mitigation benefits. As such, during this update process, the County and its municipalities have been encouraged to consider the mitigation benefits associated with their known or anticipated capital projects as a way to help prioritize their execution and to develop awareness that mitigation grants may be available to help fund such projects.

### 5.6.2 Federal Hazard Mitigation Funding Opportunities

#### ***Hazard Mitigation Grant Program (HMGP)***

The HMGP (Stafford Act 404 and 406) is a post-disaster mitigation program. It is made available to states by FEMA after each federal disaster declaration. The HMGP can provide up to 75 percent funding for hazard mitigation measures and can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration or that will reduce the likely damage from future disasters. Examples of projects include acquisition and demolition of structures in hazard-prone areas, floodproofing, or elevation to reduce future damage, minor structural improvements, and development of state or local standards. Projects must fit into an overall mitigation strategy for the area identified as part of a local planning effort. All applicants must have a FEMA-approved Hazard Mitigation Plan. Applicants who are eligible for the HMGP include state and local governments, certain nonprofit organizations or institutions that perform essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for the HMGP; a local government must apply on their behalf. Applications are submitted to PEMA and placed in rank order for available funding and submitted to FEMA for final approval. Eligible projects not selected for funding are placed in an inactive status and may be considered as additional HMGP funding becomes available.

Sections 404 hazard mitigation funding and 406 hazard mitigation funding are two distinct funding criterion associated with mitigation funding. Participation in FEMA 404 HMGP may cover mitigation activities including raising, removing, relocating or replacing structures within flood hazard areas. FEMA 406 HMGP is applied to parts of a facility that were actually damaged by the disaster and the mitigation measure that provides protection from subsequent events.

***Flood Mitigation Assistance (FMA) Program***

FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. The FMA is funded annually; no federal disaster declaration is required. Only NFIP insured homes and businesses are eligible for mitigation in this program. Funding for FMA is very limited and, as with the HMGP, individuals cannot apply directly for the program. Applications must come from local governments or other eligible organizations. The federal government cost share for an FMA project is 75 percent. At least 25 percent of the total eligible costs must be provided by a non-federal source and of this 25 percent, no more than half can be provided as in-kind contributions from third parties. At a minimum, a FEMA-approved local Hazard Mitigation Plan is required before a project can be approved. FMA funds are distributed from FEMA to the state. PEMA serves as the grantee and program administrator for FMA.

As of FY 2013, the Severe Repetitive Loss and Repetitive Flood Claims Programs were dismantled and incorporated into the FMA Program. As a result, residential and non-residential properties currently insured with NFIP are eligible to receive FMA funds as long as they meet either the RLP or SRL property definitions as described in Section 4.3.5 of this plan.

***Pre-Disaster Mitigation (PDM) Program***

The PDM program is an annually funded, nationwide, competitive grant program. No disaster declaration is required. Federal funds will cover 75 percent of a project's cost up to \$3 million. As with the HMGP and FMA, a FEMA-approved local Hazard Mitigation Plan is required to be approved for funding under the PDM program.

### 5.6.3 Federal Disaster Assistance Programs

Following a disaster, various types of assistance may be made available by local, state and federal governments. The types and levels of disaster assistance depend on the severity of the damage and the declarations that result from the disaster event. General types of assistance that may be provided, should the President of the United States declare the event a major disaster, include the following:

- Individual Assistance – provides help for homeowners, renters, businesses, and some non-profit entities after disasters occur. This program is largely funded by the U.S. Small Business Administration. For homeowners and renters, those who suffered uninsured or underinsured losses may be eligible for a Home Disaster Loan to repair or replace damaged real estate or personal property. Renters are eligible for loans to cover personal property losses. Individuals may borrow up to \$200,000 to repair or replace real estate, \$40,000 to cover losses to personal property and an additional 20 percent for mitigation. For businesses, loans may be made to repair or replace disaster damages to property owned by the business, including real estate, machinery and equipment, inventory and supplies. Businesses of any size are eligible. Non-profit organizations such as charities, churches, private universities, etc. are also eligible. An Economic Injury Disaster Loan provides necessary working capital until normal operations resume after a physical disaster. These loans are restricted, by law, to small businesses only.
- Public Assistance – provides cost reimbursement aid to local governments (state, county, local, municipal authorities and school districts) and certain non-profit agencies that were involved in disaster response and recovery programs or that suffered loss or damage to facilities, or property used to deliver government-like services. This program is largely funded by FEMA with both local and state matching contributions required.

#### 5.6.4 Other Potential Funding Sources

##### ***Community Development Block Grants (CDBG)***

CDBG are federal funds intended to provide low- and moderate-income households with decent housing, a suitable living environment, and expanded economic opportunities. Eligible activities include community facilities and improvements, roads and infrastructure, housing rehabilitation and preservation, development activities, public services, economic development, planning, and administration. Public improvements may include flood and drainage improvements. In limited instances, and during the times of “urgent need” (e.g. post disaster) as defined by the CDBG National Objectives, CDBG funding may be used to acquire a property located in a floodplain that was severely damaged by a recent flood, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event.

While most of the identified fiscal capabilities are available to all of the municipalities in Westmoreland County, the extent to which communities have leveraged these funding sources varies widely. It is expected that communities familiar with accessing grant programs will continue to pursue those grant sources, as appropriate.

##### ***Marcellus Shale Legacy Fund - Act 13 of 2012***

Watershed Restoration and Protection Program (WRPP) - Act 13 of 2012 establishes the Marcellus Legacy Fund and allocates funds to the Commonwealth Financing Authority for watershed restoration and protection projects. The overall goal of this program is to restore, and maintain restored stream reaches impaired by the uncontrolled discharge of nonpoint source polluted runoff, and ultimately to remove these streams from the Department of Environmental Protection’s Impaired Waters list.

Greenways, Trails and Recreation Program (GTRP) - In addition, Act 13 of 2012 allocates funds to the Commonwealth Financing Authority (the “Authority”) for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects. Projects can involve development, rehabilitation and improvements to public parks, recreation areas, greenways, trails and river conservation.

Flood Mitigation Projects – Finally, Act 13 of 2012 allocates funds to the Commonwealth Financing Authority (the “Authority”) for funding statewide initiatives to assist with flood mitigation projects.

#### 5.6.5 Municipal Capabilities

Municipalities participating in this planning effort were provided with a capabilities survey. This section summarizes the responses of the municipalities based on fiscal capabilities (Table 5.6-1). Copies of the individual municipal responses are found in Appendix D.

*Table 5.6-1: Fiscal Capability*

Municipality	Capital Improvements Program	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
Adamsburg										
Allegheny Township										
Arnold										
Arona										
Avonmore	-	-	-	-	-	-	-	-	-	-
Bell Township										
Bolivar										
Cook Township										
Delmont	-	-	X	-	X	-	-	-	-	-
Derry										
Derry Township										
Donegal Borough	-	-		-	-	-	-	-	-	-
Donegal Township	-	X	-	-	-	-	-	-	-	-
East Huntingdon	-	-	-	-	-	-	-	-	-	-
East Vandergrift										
Export										
Fairfield Township	-	X	-	-	X	-	-	-	X	-
Greensburg	X	X	-	-	-	-	-	-	X	-
Hempfield Township	X	X	-	-	-	-	-	X	X	-
Hunker										
Hyde Park										
Irwin		X								
Jeannette										
Latrobe										
Laurel Mountain										
Ligonier	-	-	-	-	-	-	-	-	-	-
Ligonier Township										
Lower Burrell										

Municipality	Capital Improvements Program	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
Loyalhanna Township										
Madison										
Manor	-	X	-	-	-	-	-	-	-	-
Monessen										
Mount Pleasant										
Mount Pleasant Twp.										
Murrysville	X	X	X	-	-	-	X	X	-	-
New Alexandria	-	-	-		X	-	-	-	-	-
New Florence										
New Kensington										
New Stanton	-	X	X	-	-	-	-	X	X	-
North Belle Vernon										
North Huntingdon Township	-	-	-	-	-	-	-	-	-	-
North Irwin										
Oklahoma	-	-	-	-	X	-	-	-	-	-
Penn										
Penn Township	X	X	X	-	-	-	X	X	X	-
Rostraver Township										
Salem Township										
Scottdale										
Seward										
Sewickley Township										
Smithton										
South Greensburg										
South Huntingdon										
Southwest Greensburg										
St. Clair Township										
Sutersville										

Municipality	Capital Improvements Program	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
Trafford										
Unity Township										
Upper Burrell	X	-	-	-	-	-	-	-	-	-
Vandergrift										
Washington Township	-	-	-	-	X	-	X	X	X	-
West Leechburg										
West Newton										
Youngstown										
Youngwood										

Note: The “X” indicates that the municipality currently has this capability in place. A “-” indicates no capability is currently in place, and a blank space indicates no response was received from the municipality. For detailed information, please refer to the municipal survey responses located in Appendix D.

## 5.7 Political Capability

For a hazard mitigation project, political capability speaks to a jurisdiction’s ability, will, and commitment to supporting risk management activities and programs within all aspects of their community’s governance. This may be evidenced through the adoption and appropriate enforcement of mitigation-related ordinances and plans (zoning, comprehensive planning, site-plan review, building code, higher regulatory standards), appropriate and critical mitigation-related outreach to vulnerable property owners and the public in general, an appropriate dedication of resources (administrative, technical, fiscal) to implement identified priority mitigation projects/actions, and the integration and coordination of the findings and recommendations of this plan update within other complementary and supportive plans and programs.

Strong political capabilities are built over time; they are not necessarily transferred from one elected official to the next. Communities that have had to repeatedly face hazard events and their impacts tend to be those that build and maintain greater mitigation capabilities, and this is certainly the case with political (including public) will. Through this mitigation planning, update, and implementation process, FEMA and the state are promoting efforts to build political and popular support to improve the management of hazard risk at the local level.

The capability assessment surveys provided to each jurisdiction for completion included an assessment of local political capability, where the respondent was asked to rate their community’s political capability to effect and support hazard mitigation on a scale ranging from “5 – Very Willing” to “0 – Unwilling to Adopt Policies/Programs.” Completed capability assessment worksheets returned from communities may



be found in Appendix D. By its very nature, an assessment of political capabilities tends to be highly subjective, and any such local assessment provided by a community should not necessarily be considered statistically valid or reflective of the opinions of others in the community.

### 5.7.1 Municipal Capabilities

Participating municipalities in this planning effort were provided with a capabilities survey. This section summarizes the responses of the municipalities based on Political Capability (Table 5.7-1).

*Table 5.7-1: Political Capability*

Municipality	Very Willing	Moderate to Very Willing	Moderately Willing	Unwilling to Moderately Willing	Unwilling
Adamsburg					
Allegheny Township					
Arnold					
Arona					
Avonmore			X		
Bell Township					
Bolivar					
Cook Township					
Delmont		X			
Derry					
Derry Township					
Donegal Borough	X				
Donegal Township			X		
East Huntingdon			X		
East Vandergrift					
Export					
Fairfield Township			X		
Greensburg	X				
Hempfield Township			X		
Hunker					
Hyde Park					
Irwin			X		
Jeannette					
Latrobe					
Laurel Mountain					
Ligonier			X		
Ligonier Township					
Lower Burrell					
Loyalhanna Township					
Madison					
Manor			X		

SECTION 5: CAPABILITY ASSESMENT

Municipality	Very Willing	Moderate to Very Willing	Moderately Willing	Unwilling to Moderately Willing	Unwilling
Monessen					
Mount Pleasant					
Mount Pleasant Twp.					
Murrysville		X			
New Alexandria			X		
New Florence					
New Kensington					
New Stanton		X			
North Belle Vernon					
North Huntingdon Township					
North Irwin					
Oklahoma					
Penn					
Penn Township			X		
Rostraver Township					
Salem Township			X		
Scottdale					
Seward					
Sewickley Township					
Smithton					
South Greensburg					
South Huntingdon					
Southwest Greensburg					
St. Clair Township					
Sutersville					
Trafford					
Unity Township					
Upper Burrell	X				
Vandergrift					
Washington Township			X		
West Leechburg					
West Newton					
Youngstown					
Youngwood					

Note: The “X” indicates the identified municipal political effort currently in place. A blank space indicates no response was received from the municipality. For detailed information, please refer to the municipal survey responses located in Appendix D.

## 5.8 Self-Assessment

Through the capability assessment surveys, all participating jurisdictions were further asked to provide a self-assessment of their jurisdiction’s capability in the areas of Planning and Regulatory Capability, Administrative and Technical Capability, Fiscal Capability, Community Political Capability, and Community Resilience Capability. Respondents evaluated their degree of capability in these areas as “Limited”, “Moderate” or “High.” Table 5.8-1 provides the summary results from municipalities that completed capability self-assessment worksheets.

*Table 5.8-1. Capability Self-Assessment Matrix*

Municipality	Capability Category				
	Planning and Regulatory Capability	Administrative and Technical Capability	Fiscal Capability	Community Political Capability	Community Resiliency Capability
Adamsburg					
Allegheny Township					
Arnold					
Arona					
Avonmore	Limited	Limited	Limited	Limited	Limited
Bell Township					
Bolivar					
Cook Township					
Delmont	Moderate	Moderate	Moderate	Moderate	Moderate
Derry					
Derry Township					
Donegal Borough	Moderate	Moderate	Moderate	Moderate	Moderate
Donegal Township	Limited	Limited	Limited	Limited	Limited
East Huntingdon	Limited	Limited	Limited	Limited	Limited
East Vandergrift					
Export					
Fairfield Township	Moderate	Moderate	Limited	Moderate	Limited
Greensburg	High	High	High	High	High
Hempfield Township					
Hunker					
Hyde Park					
Irwin	Moderate	Moderate	Limited	Moderate	Moderate
Jeannette					
Latrobe					
Laurel Mountain					
Ligonier	Limited	Limited	Limited	Limited	Limited
Ligonier Township					
Lower Burrell					
Loyalhanna Township					
Madison					

SECTION 5: CAPABILITY ASSESMENT

Municipality	Capability Category				
	Planning and Regulatory Capability	Administrative and Technical Capability	Fiscal Capability	Community Political Capability	Community Resiliency Capability
Manor	Limited	Limited	Moderate	Moderate	High
Monessen					
Mount Pleasant					
Mount Pleasant Twp.					
Murrysville	Moderate	Moderate	Moderate	Moderate	Moderate
New Alexandria	Limited	Limited	Limited	Limited	Limited
New Florence					
New Kensington					
New Stanton	Moderate	Moderate	Moderate	Moderate	Moderate
North Belle Vernon					
North Huntingdon Township					
North Irwin					
Oklahoma					
Penn					
Penn Township	High	High	Moderate	Limited	-
Rostraver Township					
Salem Township		High	High		
Scottdale					
Seward					
Sewickley Township					
Smithton					
South Greensburg					
South Huntingdon					
Southwest Greensburg					
St. Clair Township					
Sutersville					
Trafford					
Unity Township					
Upper Burrell	Limited	Limited	Limited	Moderate	Moderate
Vandergrift					
Washington Township	Moderate	Limited	Limited	Limited	Limited
West Leechburg					
West Newton					
Youngstown					
Youngwood					

Note: A “-” indicates no capability is currently in place, and a blank space indicates no response was received from the municipality. For detailed information, please refer to the municipal survey responses located in Appendix D.



## 5.9 Capability Assessment Recommendations

It is well recognized that a jurisdiction's ability to effectively manage natural hazard risk is directly related to their level of hazard mitigation capabilities. As such, mitigation strategies developed in coordination with Westmoreland County's municipalities have a direct effect on establishing new capability functions in the community or strengthening existing capabilities.

## SECTION 6: MITIGATION STRATEGY

This section describes the process by which the Westmoreland Hazard Mitigation Working Group and municipal planning partnership will reduce or eliminate potential losses from natural and non-natural hazards identified in Section 4.2 of this document. The Mitigation Strategy focuses on existing and potential future mitigation actions to mitigate the effects of hazards on Westmoreland's population, economy, and general building stock.

### 6.1 FEMA Requirements Addressed in this Section

The Hazard Mitigation Working Group developed the mitigation strategy consistent with the process and steps presented in FEMA's How-To-Guide: *Developing the Mitigation Plan*. This mitigation strategy section is designed to satisfy the following FEMA requirements:

1. **Requirement 201.6(c) (3) (i):** [The hazards mitigation strategy *shall* include] a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
2. **Requirement 201.6(c) (3) (ii):** [The hazards mitigation strategy *shall* include] a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.
3. **Requirement 201.6(c) (3) (iii):** [The hazards mitigation strategy *shall* include] an action plan describing how the actions identified in section (c) (3) (ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization *shall* include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

### 6.2 Mitigation Planning Approach

The general mitigation planning approach used to develop this plan update is based on the FEMA publication: *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies*. The document includes the following four steps, which were used to support mitigation planning for this HMP.

1. **Review of Mitigation Goals and Objectives:** Mitigation goals and objectives were examined during the 2014 HMP update kick-off meeting. The Hazard Mitigation Working Group was afforded the opportunity to comment on the goals and objectives that were listed in the existing 2009 HMP. Mitigation goals and objectives were updated or developed using the latest information gathered through the hazard profiles, vulnerability assessments, and risk assessment.
2. **Develop and Update Mitigation Strategies:** Mitigation actions are identified based on the risk assessment, the mitigation goals and objectives, existing policies, and input from the Hazard Mitigation Working Group and municipal planning partnership.



3. **Mitigation Strategy Prioritization and Implementation:** The potential mitigation actions were qualitatively evaluated using the PASTEEL method, described in more detail in Section 6.4. Mitigation actions were prioritized into three categories: highest priority, high priority, and moderate priority. Highest- and high-priority mitigation actions are recommended for implementation before moderate-priority actions; however, based on county/community specific needs, cost estimation, and available funding, some moderate-priority mitigation actions may be addressed first.
4. **Document the Mitigation Planning Process:** The entire mitigation planning process is documented throughout the 2014 HMP update.

### 6.3 Review of Mitigation Goals and Objectives

Subsequent to this review process, the goals of the 2009 plan have changed to better embody the overarching needs and concerns of the county and participating municipalities in addressing natural and non-natural hazard risk reduction. The updated goals are in line with the state mitigation goals.

1. **Goal 1:** To minimize the risk to human life associated with natural and non-natural hazards.
2. **Goal 2:** To promote hazard avoidance, especially in floodplains, by removing high-risk and repetitive loss structures, and by issuing building restrictions on future development.
3. **Goal 3:** To reduce the damage from natural and non-natural hazards to existing and future public and private assets including structures, critical facilities, and infrastructure.
4. **Goal 4:** To protect and restore existing natural resources including wetlands, floodplains, and riparian buffers.
5. **Goal 5:** To develop, prioritize and implement cost-effective, long-term actions that will reduce the impacts of natural and non-natural hazards.
6. **Goal 6:** To enhance planning and emergency response efforts among local, county, state, and federal, emergency management personnel to protect public health and safety.
7. **Goal 7:** To promote public awareness on the potential impacts of natural and non-natural hazards, and actions to reduce those impacts.

### 6.4 Develop and Prioritize Mitigation Strategies

Concerted efforts were made to ensure that the county and its municipalities develop updated mitigation strategies that included activities and initiatives covering the range of mitigation action types described in FEMA guidance (FEMA 386-3), including:

1. **Prevention:** Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
2. **Property Protection:** Actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
3. **Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include

outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

4. **Natural Resource Protection:** Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. **Emergency Services:** Actions that protect people and property, during and immediately following, a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.
6. **Structural Projects:** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Table 6.1 depicts the updated mitigation strategies identified by the county and all participating municipalities, including:

- Mitigation actions for individual and multiple hazards;
- Identification of the mitigation action type;
- Department or agency primarily responsible for project initiation and/or implementation;
- Estimated cost for the mitigation action, and identification of known or potential sources of funding;
- Implementation schedule; and
- Implementation priority.

Specific mitigation actions were identified to prevent future losses; however, current funding is not identified for all of these actions at present. The county and participating municipalities have limited resources to take on new responsibilities or projects. The implementation of these mitigation actions is dependent on the approval of the local elected governing body and the ability of the jurisdiction to obtain funding from local or outside sources.

In general, mitigation actions ranked as highest priorities will be addressed first. However, high- or medium-priority mitigation actions will be considered for concurrent implementation. Therefore, the ranking levels should be considered as a preliminary ranking, which will evolve based on prevailing priorities and decisions of local governments, the public, PEMA, and FEMA as the plan update is implemented.

**Table 6-1 Hazard Mitigation Strategy**

Note some of the identified mitigation initiatives in Table 6.1 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 county or municipal priorities.

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
1	Install additional stormwater runoff pipes and upgrade/replace existing deteriorated pipes.	Property Protection, Prevention	Flood	Highest	High	Mt. Pleasant Borough Municipal Budget, FEMA Mitigation Grant Program	Mt. Pleasant Borough	Short Term	Existing
2	Procure and install a back-up generator into Hunker Borough EOC.	Prevention, Emergency Services	All-Hazards	High	Low	Huncker Borough General Fund, FEMA Mitigation Grant Program	Huncker Borough	Short Term DOF	Existing
3	Procure and install air conditioning units into community building / community shelter.	Prevention	Extreme Temperatures	High	Low	Huncker Borough General Fund	Huncker Borough	Short Term DOF	Existing
4	Retrofit community building to prevent flooding in basement.	Prevention	Flood	High	Medium	Huncker Borough General Fund, FEMA Mitigation Grant Program	Huncker Borough	Short Term DOF	Existing
5	Pave Bellson Street in Huncker Borough. Install proper drainage to prevent flooding.	Prevention	Flood, Transportation Accidents	Moderate	Medium	Huncker Borough General Fund, FEMA Mitigation Grant Program	Huncker Borough	Short Term DOF	Existing
6	Implement the redirection of the stormwater catch basin at the intersection of Walnut and Bridge St.	Prevention	Flood	Moderate	Low	Huncker Borough General Fund	Huncker Borough	Short Term DOF	Existing
7	Demolition of abandoned home.	Prevention	All-Hazards	High	Low	Huncker Borough General Fund	Huncker Borough	Short Term DOF	Existing
8	Install sub-flooring to prevent roadway along Locust St. from sinking.	Prevention	Subsidence	Moderate	Medium	Huncker Borough General Fund	Huncker Borough	Short Term DOF	Existing
9	Retrofit Walnut St. Bridge to prevent erosion.	Property Protection, Prevention	All-Hazards	Moderate	Medium	Huncker Borough General Fund, FEMA Mitigation	Huncker Borough	Short Term DOF	Existing



Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
						Grant Program, Community Development Grant Programs			
10	Construct and install a new culvert in Llyodsville to enhance hydraulic capacity.	Property Protection, Prevention	Flood	Moderate	High	Unity Township Municipal Budget, FEMA Mitigation Grant Program	Unity Township	Short Term DOF	Existing
11	Install a stormwater detention system in Lawson Heights.	Property Protection, Prevention	Flood	Moderate	High	Unity Township Municipal Budget, FEMA Mitigation Grant Program	Unity Township	Short Term DOF	Existing
12	Replace and enhance stormwater runoff pipes in Moreland Manor.	Property Protection, Prevention	Flood	Moderate	Medium	Allegheny Township Municipal Budget, FEMA Mitigation Grant Program	Allegheny Township	Short Term DOF	Existing
13	Reconstruction of Bridge River Hill Bridge.	Property Protection, Prevention	All-Hazards	Moderate	High	St. Clair Township Municipal Budget, Community Development Grant Programs	St. Clair Township	Short Term DOF	Existing
14	Reconstruction of Bridge Sugar Run Road.	Structural	All-Hazards	Moderate	High	St. Clair Township Municipal Budget, Community Development Grant Programs	St. Clair Township	Long Term DOF	Existing

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
15	Reconstruction of Patterson Bridge.	Structural	All-Hazards	Moderate	High	Fairfield Township Municipal Budget, Community Development Grant Programs	Fairfield Township	Short Term DOF	Existing
16	Install storm water drainage system along Pinewood Road.	Property Protection, Prevention	Flood	Moderate	High	Sewickley Township Municipal Budget, FEMA HMA Grant Program Community Development Grant Programs	Sewickley Township	Short Term DOF	Existing
17	Procure a skid loader/grab attachment for storm clean up and culvert clean out.	Prevention	All-Hazards	High	Low	Sewickley Township Municipal Budget	Sewickley Township	Short Term DOF	Existing
18	Procure remote receive sites to enhance communications.	Emergency Services	All-Hazards	Highest	Medium - High	Sewickley Township Municipal Budget	Sewickley Township	Short Term DOF	Existing
19	Procure sweeper truck for stormwater management.	Emergency Services	Flood	High	High	Sewickley Township Municipal Budget	Sewickley Township	Short Term DOF	Existing
20	Procure and install a back-up generator into Hutchinson VFD Station 85.	Prevention, Emergency Services	All-Hazards	Moderate	Medium	Sewickley Township Municipal Budget, FEMA HMA Grant Program	Sewickley Township	Short Term DOF	Existing
21	Procure and install a back-up generator into Lowber VFD Station 16.	Prevention, Emergency Services	All-Hazards	Moderate	Medium	Sewickley Township Municipal Budget, FEMA HMA Grant Program	Sewickley Township	Short Term DOF	Existing
22	Procure and install a back-up generator into Rillton VFD Station 14.	Prevention, Emergency Services	All-Hazards	Moderate	Medium	Sewickley Township Municipal	Sewickley Township	Short Term DOF	Existing



Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
						Budget, FEMA HMA Grant Program			
23	Procure skid steer attachment to clear debris around culverts.	Emergency Services	Flood	High	High	Sewickley Township Municipal Budget	Sewickley Township	Short Term DOF	Existing
24	Develop and implement an action plan to mitigation recurring flooding on Creek Road.	Property Protection, Prevention	Flood	Highest	Low - High	Fairfield Township Municipal Budget, FEMA HMA Grant Program, Community Development Grant Programs	Fairfield Township	Short Term DOF	Existing
25	Procure and install an emergency generator.	Prevention, Emergency Services	All-Hazards	Moderate	Medium	Upper Burrell Township Municipal Budget, FEMA HMA Grant Program	Upper Burrell Township	Short Term DOF	Existing
26	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 a viable option, work with property owners toward implementation based on available funding from FEMA and local match availability.	Property Protection	Flood	Highest	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
27	Purchase, or relocate	Property	Flood	High	High	FEMA Mitigation	Municipality	Long Term DOF	Existing





Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	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 relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined a viable option, work with property owners toward implementation based on available funding from FEMA and local match availability.	Protection				Grant Programs and local budget (or property owner) for cost share	(via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA		
28	Maintain compliance with and be in 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.	Property Protection	Flood	High	Low	County / Municipal Budget	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, ISO FEMA	On-going	New & Existing
29	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	County / Municipal Budget	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA	Short Term	New & Existing
30	Determine if a Community Assistance Visit (CAV) or	Prevention, Property	Flood	High	Low	County / Municipal Budget	Municipality (via Municipal	Short Term	N/A



Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	Community Assistance Contact (CAC) is needed, and schedule if needed.	Protection					Engineer/NFIP Floodplain Administrator) with support from PEMA, FEMA		
31	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Public Education and Awareness	Flood	Highest	Low	County / Municipal Budget	NFIP Floodplain Administrator	Short Term DOF	N/A
32	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This process starts by submitting to FEMA-DHS of Letter of Intent to join CRS, followed by completing and submitting an application to the program once the community's current compliance with the NFIP is established.	Prevention, Property Protection, Public Education and Awareness	Flood	Highest	Low	County/ Municipal Budget	NFIP Floodplain Administrator with support from PADEP, PEMA, FEMA	Short Term	N/A
33	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)	County / Municipal Budget, possibly FEMA Mitigation Grant Funding for 5-year update	County / Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), PEMA	On-going	New & Existing

## SECTION 6: MITIGATION STRATEGY

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
34	Complete the ongoing updates of the Comprehensive Plans	Emergency Services	All-Hazards	High	Low	County / Municipal Budget	County / Municipality with support from PEMA	On-going	New & Existing
35	Enhance the Westmoreland County Stormwater Management Plan by implementing Phase 2 of the plan.	All categories	All-Hazards	Highest	High	County Budget, FEMA HMA Grant Program	County with support from PEMA	Short Term DOF	New & Existing
36	Create/enhance/ maintain mutual aid agreements with neighboring counties / communities for continuity of operations.	Emergency Services	All-Hazards	High	Low	County / Municipal Budget	County / Municipality with support from Surrounding municipalities / counties	On-going	New & Existing
37	Identify and develop agreements with entities that can provide support with FEMA/PEMA paperwork after disasters. Qualified damage assessment personnel should be available for post-disaster efforts, including damage assessment; FEMA/PEMA paperwork compilation, submittals, and record-keeping.	Public Education and Awareness, Emergency Services	All-Hazards	High	Medium	County Budget	County with support from PEMA, FEMA	Short Term	N/A
38	Work with regional agencies (i.e. Region 13 and PEMA) to develop damage assessment capabilities at the local level through training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	Public Education and Awareness, Emergency Services	All-Hazards	Highest	Low	County / Municipal Budget, FEMA HMA and HLS grant programs	County with support from municipalities and PEMA	Shore/Long Term DOF	N/A

Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
39	Partner with community groups such as local community organizations, including civic, business, town watch, faith-based, senior, special needs and tenant associations to promote emergency preparedness and mitigation efforts.	Public Education	All-Hazards	Highest	Low	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	On-going	N/A
40	Develop geospatial and analytical tools to support community engagement, policy reform, and county and regional planning efforts.	Public Education	All-Hazards	Highest	Low - Medium	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	Short Term DOF	N/A
41	Develop a hazard event GIS database to help county and local emergency managers with hazard mitigation and other planning initiatives.	Prevention	All-Hazards	Highest	Low	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	Short Term DOF	New & Existing
42	Maintain and exercise continuity of government plan to enable the county government to provide critical services during an interruption of business.	Prevention	All-Hazards	Highest	Medium - High	County Budget	County / Municipality with support from PEMA	Short Term DOF	N/A
43	Implement seismic retrofits to vulnerable critical facilities.	Structural	Earthquake	Moderate	High	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	Long Term DOF	New & Existing
44	Regulate development to reduce flood losses in vulnerable fluvial areas.	Property Protection	Flood	Highest	Low	County / Municipal Budget	County / Municipality	Ongoing	New & Existing
45	Develop and maintain an outreach program to provide information and guidance to municipalities on their role in flood plain development.	Public Education	All-Hazards	Highest	Low	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	Short Term DOF	N/A
46	Support and utilize an	Prevention	All-Hazards	Highest	Medium	Homeland	County /	Short Term DOF	New &



Action No.	Action	Mitigation Technique Category	Hazard(s) Addressed	Priority	Estimated Cost	Potential Funding Sources	Lead Agency / Department	Implementation Schedule	Applies to New and/or Existing Structures*
	advanced warning system that provides emergency text and email alerts to the public.					Security Grant Program Funding	Municipality with support from PEMA		Existing
47	Procure redundant power sources (portable generators).	Emergency Services	All-Hazards	Highest	Low	Municipal Budget, FEMA HMA grant programs	Municipality with support from PEMA	Short Term DOF	New & Existing
48	Maintain redundant power sources	Emergency Services	All-Hazards	Highest	Low	County Budget, FEMA HMA grant programs	County with support from PEMA	Short Term DOF	New & Existing
49	Develop and distribute educational information on hazards, emergency preparedness and fire prevention.	Public Education	All-Hazards	Highest	Low	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	Short Term DOF	N/A
50	Develop and distribute public outreach materials on water conservation.	Public Education	Drought	Highest	Low	County / Municipal Budget, FEMA HMA grant programs	County / Municipality with support from PEMA	Short 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 Term = 1 to 5 years. Long Term = 5 years or greater. OG = Ongoing program.  
DOF = Depending on funding.



## 6.5 Update of County-Level Mitigation Strategies

In the 2009 Westmoreland HMP, Westmoreland County identified 12 county-level actions/initiatives to support an improved understanding of hazard risk and vulnerability, and enhance mitigation capabilities. Progress on the 2009 county-level mitigation actions was evaluated during this update process.

The update of the county-level mitigation strategies included a review of progress on the actions/initiatives identified in the 2009 HMP, using a process similar to that used to review municipal mitigation strategy progress. Westmoreland County, via various representatives on the Hazard Mitigation Working Group, was provided with a Mitigation Action Plan Review Worksheet identifying all of the county-level actions/initiatives from the 2009 plan. For each action, the respondents were asked to indicate the status of each action (“No Progress/Unknown,” “In Progress/Not Yet Complete,” “Continuous,” “Completed,” or “Discontinued”), and provide review comments on each.

The completed Mitigation Action Plan Review Worksheet is provided in Table 6.2. Projects/initiatives identified as “Complete” and “Discontinued” have been removed from this plan update. Those actions the County has identified as “No Progress/Unknown,” “In Progress/Not Yet Complete,” or “Continuous” have been carried forward in the updated mitigation strategies identified in Table 6.1 of this plan update.



**Table 6-2 Mitigation Action Review Worksheet**

Initiative	Mitigation Initiative	Progress	Costs (Estimate / Actual)	Hazard(s)	Lead Agency	FEMA Mitigation Grant Eligible?	Funds Avail. for the Action? *	Carry Over or remove from Plan	Priority	Comments
2009-1	Install Concrete Box Culvert	No Progress/ Unknown	\$ 210,125.00	Flooding	Donegal Twp		Twp General Fund	Carry over	Highest	REJECTED 3/10/2011
2009-2	Bridge Replacement	No Progress/ Unknown	\$ 163,000.00	Flooding	East Huntingdon Twp		Twp General Fund	Carry over	Highest	
2009-3	Storm Water Conveyance	No Progress/ Unknown	\$ 172,800.00	Flooding	North Irwin		Loans	Carry over	Highest	
2009-4	Stabilize Stream Bank	No Progress/ Unknown	Cost under review	Flooding	Smithton		None	Carry over	Highest	
2009-5	Relocate Stream in Controlled Channel	No Progress/ Unknown	Cost under review	Flooding	Smithton		None	Carry over	Highest	
2009-6	Storm Water Mitigation	No Progress/ Unknown	\$ 2,400,000.00	Flooding	Mount Pleasant Borough		None	Carry over	Highest	
2009-7	Raise roadway, replace cross pipes, box culvert, asphalt, riprap, Stabilize	No Progress/ Unknown	\$ 425,725.00	Flooding	Cook Twp		None	Carry over	Highest	
2009-8	Stormwater	Completed	\$	Flooding	Fairfield Twp		CDBG	remov	N/A	Completed using CDBG Community Development Block



SECTION 6: MITIGATION STRATEGY

Initiative	Mitigation Initiative	Progress	Costs (Estimate / Actual)	Hazard(s)	Lead Agency	FEMA Mitigation Grant Eligible?	Funds Avail. for the Action? *	Carry Over or remove from Plan	Priority	Comments
	Conveyance		50,000.00					e		Grant
2009-9	Install Concrete Box Culvert	No Progress/Unknown	\$ 1,500,000.00	Flooding	Unity Twp		None	Carry over	Highest	
2009-10	Maintain flow within creeks	No Progress/Unknown	\$ 3,100,000.00	Flooding	City of Jeannette		None	Carry over	Highest	
2009-11	Elevate or acquire structure	Completed	Cost under review	Flooding	Murrysville		None	remove	N/A	Structures removed
2009-12	In Litigation no mitigation provided at this time	Completed	Cost under review	Flooding	Murrysville		None	remove	N/A	Structures removed
2009-13	Elevate or acquire structure	Completed	Cost under review	Flooding	Murrysville		None	remove	N/A	Structures removed
2009-14	Flood proof and/or acquire structure	Completed	Cost under review	Flooding	Murrysville		None	remove	N/A	Structures removed
2009-15	Probable PENN Dot acquisition	Completed	Cost under review	Flooding	Murrysville		None	remove	N/A	Structures removed
2009-16	Road Clearing for snow events	No Progress/Unknown	\$200.00/hr	Extreme Weather	Donegal Boro		None	Carry over	High	
2009-17	Engineering for floodplain management	No Progress/Unknown	Cost under review	Flooding	Allegheny Twp		None	Carry over	High	



SECTION 6: MITIGATION STRATEGY

Initiative	Mitigation Initiative	Progress	Costs (Estimate / Actual)	Hazard(s)	Lead Agency	FEMA Mitigation Grant Eligible?	Funds Avail. for the Action? *	Carry Over or remove from Plan	Priority	Comments
2009-18	Lengthen West Main Street Bridge	No Progress/Unknown	Cost under review	Flooding	Ligonier Borough		None	Carry over	High	
2009-19	Storm Ready Businesses and Communities	No Progress/Unknown	Cost under review	Flooding	WESTMOREL AND COUNTY		None	Carry over	High	
2009-20	Radio Interoperability Operations & Data Sharing	No Progress/Unknown	\$2,500-\$5,000per unit	All-Hazards	WESTMOREL AND COUNTY		None	Carry over	High	
2009-21	Readdressing of all locations & GIS layering	No Progress/Unknown	\$1,816,000.00 contract	All-Hazards	WESTMOREL AND COUNTY		Westmoreland County	Carry over	High	
2009-22	Brush Creek	No Progress/Unknown	\$ 128,000.00	Flooding	City of Jeannette		DEP-Local Match	Carry over	High	
2009-23	Four Mile Run	No Progress/Unknown	\$ 12,000.00	Flooding	Ligonier Township		DEP-Local Match	Carry over	High	
2009-24	Separation of Sanitary & Storm sewers	Discontinued	\$ 18,000,000.00	Flooding	Vandergrift Borough	NO	PennVest	remove	N/A	INELIGIBLE May 16, 2012 per Tom Hughes
2009-25	9th Street Road Base Deterioration	No Progress/Unknown	\$ 400,000.00	Flooding	Vandergrift Borough		None	Carry over	Moderate	
2009-26	Emergency Generators	No Progress/Unknown	\$ 48,000.00	All-Hazards	Vandergrift Borough		None	Carry over	Moderate	



Initiative	Mitigation Initiative	Progress	Costs (Estimate / Actual)	Hazard(s)	Lead Agency	FEMA Mitigation Grant Eligible?	Funds Avail. for the Action? *	Carry Over or remove from Plan	Priority	Comments
2009-27	Emergency Generators LOI 4099	No Progress/Unknown	\$ 87,000.00	All-Hazards	Ligonier Township		Some township and foundations	Carry over	Moderate	
2009-28	Emergency Generators LOI 4099	No Progress/Unknown	\$ 262,500.00	All-Hazards	Ligonier Borough		5% provided by Borough	Carry over	Moderate	
2009-29	Emergency Generator LOI 4099	No Progress/Unknown	\$ 17,240.00	All-Hazards	Sutersville Borough		Special Account/Building Fund	Carry over	Moderate	
2009-30	Bridge Replacement - River Hill T-994	No Progress/Unknown	Cost Under Review	Flooding	Saint Clair Township		None	Carry over	Moderate	
2009-31	Bridge Replacement - Sugar Run Road T-900	No Progress/Unknown	Cost under review	Flooding	Saint Clair Township		None	Carry over	Moderate	

## 6.6 Mitigation Strategy Prioritization and Implementation

Section 201.6(c) (3) (iii) of 44CFR requires the prioritization of the action plan to emphasize the extent to which benefits are maximized according to a cost/benefit review of the proposed projects and their associated costs. This allows the jurisdictions to select the most cost-effective actions for implementation first, not only to use resources efficiently, but to make a realistic start toward mitigating risks.

Mitigation benefits are defined as future damages and losses that would be eliminated and/or reduced by implementing the proposed mitigation project, and include physical damage to structures and infrastructure, loss of service or function, emergency management costs, etc. Particularly for physical (“shovel-in-the-ground”) mitigation projects, jurisdictions were encouraged to estimate project costs as well as to identify the anticipated benefits. Where exact project costs and potential benefits were not available, ranges were identified (high, medium, low) for each, allowing a qualitative evaluation of project cost-effectiveness.

Municipal and county-level mitigation actions were evaluated and prioritized primarily using the PA STEEL methodology defined in Pennsylvania’s All-Hazard Planning Standard Operating Guide (October 2010), pages 36-37 and Appendix 12, “Mitigation Strategy Action Evaluation”. Table 6.3 contains the completed PA STEEL action evaluation table for the updated mitigation strategies (Table 6.1).

The PA STEEL methodology provides a uniform approach the counties and jurisdictions can use to consider, in a systematic way, the **Political, Administrative, Social, Technical, Economic, Environmental, and Legal (PA STEEL)** opportunities and constraints of implementing a particular mitigation action in your jurisdiction. The following provides a brief discussion of each of the PA STEEL evaluation criteria, excerpted from the FEMA 386 mitigation planning guidance:

**Political:** Understanding how your current community and state political leadership feels about issues related to the environment, economic development, safety, and emergency management will provide valuable insight into the level of political support you will have for mitigation activities and programs. Proposed mitigation objectives sometimes fail because of a lack of political acceptability.

**Administrative:** Under this part of the evaluation criteria, the Hazard Mitigation Working Group will examine the anticipated staffing, funding, and maintenance requirements for the mitigation action to determine if the jurisdiction has the personnel and administrative capabilities necessary to implement the action or whether outside help will be necessary.

**Social:** The public must support the overall implementation strategy and specific mitigation actions. Therefore, the projects will have to be evaluated in terms of community acceptance.

**Technical:** It is important to determine if the proposed action is technically feasible, will help to reduce losses in the long term, and has minimal secondary impacts. Here, the Hazard Mitigation Working Group will determine whether the alternative action is a whole or partial solution, or not a solution at all.

**Economic:** Every local, state, and tribal government experiences budget constraints at one time or another. Cost-effective mitigation actions that can be funded in current or upcoming budget cycles are much more likely to be implemented than mitigation actions requiring general obligation bonds or other instruments that would incur long-term debt to a community. States and local communities with tight budgets or budget shortfalls may be more willing to undertake a mitigation initiative if it can be funded, at least in part, by outside sources. “Big ticket” mitigation actions, such as large-scale acquisition and relocation, are often considered for implementation in a post-disaster scenario when additional federal and

state funding for mitigation is available. Economic considerations must include the present economic base and projected growth.

**Environmental:** Impact on the environment is an important consideration because of public desire for sustainable and environmentally healthy communities and the many statutory considerations, such as the National Environmental Policy Act (NEPA), to keep in mind when using federal funds. You will need to evaluate whether, when implementing mitigation actions, there would be negative consequences to environmental assets such as threatened and endangered species, wetlands, and other protected natural resources.

**Legal:** Without the appropriate legal authority, the action cannot lawfully be undertaken. When considering this criterion, the Hazard Mitigation Working Group will determine whether your jurisdiction has the legal authority at the state, tribal, or local level to implement the action, or whether the jurisdiction must pass new laws or regulations. Each level of government operates under a specific source of delegated authority. As a general rule, most local governments operate under enabling legislation that gives them the power to engage in different activities. You should identify the unit of government undertaking the mitigation action, and include an analysis of the interrelationships between local, regional, state, and federal governments. Legal authority is likely to have a significant role later in the process when your state, tribe, or community will have to determine how mitigation activities can best be carried out, and to what extent mitigation policies and programs can be enforced.

Per the PEMA SOG, the mitigation strategy evaluation through the PA STEEL methodology also summarizes the feasibility factors for each action and summarizes the factors with benefits and costs weighed more heavily and, therefore given greater priority. Using cost-benefit weighted prioritization, mitigation actions were ranked as highest-priority, high-priority or moderate-priority actions.

Other factors beyond the PA STEEL numeric rankings may have to be considered during project prioritization. For example, a project might be assigned a moderate priority because of the uncertainty of a funding source. This priority could be changed to high once a funding source has been identified such as a grant.



Table 6-3 Analysis of Mitigation Actions

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)	Priority Ranking		
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority			Potential Legal Challenge	
1	Install additional stormwater runoff pipes and upgrade/replace existing deteriorated pipes.	+	N	+	-	-	-	+	+	+	+	+	-	N	+	+	N	N	+	N	N	+	N	12(+) 4(-) 7(N)	Highest
2	Procure and install a back-up generator into Hunker Borough EOC.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	N	N	N	N	N	+	N	8(+) 4(-) 11(N)	High
3	Procure and install air conditioning units into community building / community shelter.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	N	N	N	N	N	N	N	8(+) 4(-) 11(N)	High
4	Retrofit community building to prevent flooding in basement.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	N	N	N	N	N	N	N	8(+) 4(-) 11(N)	High
5	Pave Bellson Street in Hunker Borough. Install proper drainage to prevent flooding.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	8(+) 5(-) 10(N)	Mode rate
6	Implement the redirection of the stormwater catch basin at the intersection of Walnut and Bridge St.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	8(+) 5(-) 10(N)	Mode rate
7	Demolition of abandoned home.	+	N	+	-	-	-	+	-	+	+	N	+	+	N	+	+	N	-	+	N	N	+	10(+) 6(-) 7(N)	High



SECTION 6: MITIGATION STRATEGY

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)	Priority Ranking		
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
8	Install sub-flooring to prevent roadway along Locust St. from sinking.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	8 (+) 5 (-) 10(N)	Mode rate	
9	Retrofit Walnut St. Bridge to prevention erosion.	+	N	+	-	-	-	+	+	+	+	n	+	-	N	+	-	N	N	N	N	-	N	N	8 (+) 6 (-) 9 (N)	Mode rate
10	Construct and install a new culvert in Llyodsville to enhance hydraulic capacity.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	N	8 (+) 5 (-) 10(N)	Mode rate
11	Install a stormwater detention system in Lawson Heights.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	N	8 (+) 5 (-) 10(N)	Mode rate
12	Replace and enhance stormwater runoff pipes in Moreland Manor.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	N	8 (+) 5 (-) 10(N)	Mode rate
13	Reconstruction of Bridge River Hill Bridge.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	-	N	N	8 (+) 6 (-) 9 (N)	Mode rate
14	Reconstruction of Bridge Sugar Run Road.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	-	N	N	8 (+) 6 (-) 9 (N)	Mode rate
15	Reconstruction of Patterson Bridge.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	-	N	N	8 (+) 6 (-) 9 (N)	Mode rate
16	Install storm water drainage system along Pinewood Road.	+	N	+	-	-	-	+	+	+	+	N	+	-	N	+	-	N	N	N	N	N	N	N	8 (+) 5 (-) 10(N)	Mode rate



SECTION 6: MITIGATION STRATEGY

Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results				
		(+)					(-)					(N)														
		P Political			A Administrative				S Social		T Technical			E Economic				E Environmental				L Legal				SUMMARY (EQUAL WEIGHTING)
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
17	Procure a skid loader/grab attachment for storm clean up and culvert clean out.	-	+	N	N	N	+	N	-	+	-	+	+	+	N	N	N	N	+	+	N	+	+	N	10(+) 3 (-) 10(N)	High
18	Procure remote receive sites to enhance communications.	+	+	+	+	-	-	+	+	+	+	-	+	-	N	+	-	N	N	N	+	-	+	-	12(+) 7 (-) 4 (N)	Highest
19	Procure sweeper truck for stormwater management.	N	N	N	-	-	+	+	-	+	+	N	+	+	N	+	+	N	+	+	N	N	N	N	10(+) 3 (-) 10(N)	High
20	Procure and install a back-up generator into Hutchinson VFD Station 85.	+	N	+	-	-	-	+	+	+	+	N	-	-	N	+	N	N	N	N	N	N	+	N	8 (+) 5 (-) 10(N)	Mode rate
21	Procure and install a back-up generator into Lower VFD Station 16.	+	N	+	-	-	-	+	+	+	+	N	-	-	N	+	N	N	N	N	N	N	+	N	8 (+) 5 (-) 10(N)	Mode rate
22	Procure and install a back-up generator into Rillton VFD Station 14.	+	N	+	-	-	-	+	+	+	+	N	-	-	N	+	N	N	N	N	N	N	+	N	8 (+) 5 (-) 10(N)	Mode rate
23	Procure skid steer attachment to clear debris around culverts.	N	N	N	-	-	+	+	-	+	+	N	+	+	N	+	+	N	+	+	N	N	N	N	10(+) 3 (-) 10(N)	High
24	Develop and implement an action plan to mitigation recurring flooding on Creek Road.	+	N	+	-	-	+	+	+	+	+	+	+	-	N	+	+	N	+	+	+	-	-	N	14(+) 5 (-) 4 (N)	Highest



Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results				
		(+)					(-)					(N)														
		P Political			A Administrative				S Social		T Technical			E Economic				E Environmental				L Legal				SUMMARY (EQUAL WEIGHTING)
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
25	Procure and install an emergency generator.	+	N	+	-	-	-	+	+	+	+	N	-	-	N	+	N	N	N	N	N	+	N	8 (+) 5 (-) 10(N)	Mode rate	
26	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	+	-	-	-	-	N	+	+	+	+	N	+	-	N	+	+	N	N	N	+	+	+	N	11(+) 5 (-) 7 (N)	Highest
27	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.	+	-	-	-	-	N	+	+	+	+	N	+	-	-	+	N	N	N	N	+	+	-	-	9 (+) 8 (-) 6 (N)	High
28	Maintain compliance with and be in 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	+	-	-	-	-	N	+	+	+	+	N	+	-	-	+	+	N	N	+	+	+	-	N	11(+) 7 (-) 5 (N)	High



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)	Priority Ranking			
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority			Potential Legal Challenge		
	flood areas), floodplain identification and mapping, and flood insurance outreach to the community.																									
29	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).	+	-	-	-	-	N	+	+	+	+	N	+	-	-	+	+	N	N	+	+	+	-	-	9 (+) 8 (-) 6 (N)	High
30	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed.	+	-	+	+	+	N	+	+	+	-	N	+	+	N	N	N	N	N	N	N	N	N	N	9 (+) 2 (-) 12(N)	High
31	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	+	+	+	-	-	N	+	-	+	+	N	+	+	-	+	N	N	N	N	+	+	+	-	12(+) 4 (-) 7 (N)	Highest



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)	Priority Ranking
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
32	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders.	+	-	+	-	-	N	+	+	+	N	N	+	+	+	+	N	N	N	N	N	+	+	N	11(+) 3(-) 9(N)	Highest
33	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	+	-	-	-	-	-	+	+	+	-	N	+	-	-	+	N	N	N	+	+	+	-	N	9(+) 9(-) 5(N)	High
34	Complete the ongoing updates of the Comprehensive Plans	+	-	-	-	-	-	+	+	+	-	N	+	-	-	+	N	N	N	+	+	+	-	N	9(+) 9(-) 5(N)	High
35	Enhance the Westmoreland County Stormwater Management Plan by implementing Phase 2 of the plan.	+	+	+	-	-	N	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+	+	N	17(+) 4(-) 2(N)	Highest
36	Create/enhance/ maintain mutual aid agreements with neighboring counties / communities for continuity of	+	-	-	-	-	-	+	-	+	+	N	+	+	+	+	N	N	N	N	N	+	-	+	10(+) 7(-) 6(N)	High





Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results				
		(+)					(-)					(N)														
		P Political			A Administrative			S Social		T Technical			E Economic				E Environmental				L Legal			SUMMARY (EQUAL WEIGHTING)	Priority Ranking	
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
	operations.																									
37	Identify and develop agreements with entities that can provide support with FEMA/PEMA paperwork after disasters. Qualified damage assessment personnel should be available for post-disaster efforts, including damage assessment; FEMA/PEMA paperwork compilation, submittals, and record-keeping.	+	-	-	-	-	-	+	-	+	+	N	+	+	+	+	N	N	N	N	+	+	-	+	11(+) 7 (-) 5 (N)	High
38	Work with regional agencies (i.e. Region 13 and PEMA) to develop damage assessment capabilities at the local level through training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	+	-	+	-	-	-	+	+	+	+	N	+	+	+	+	N	N	+	+	+	+	N	15(+) 4 (-) 4 (N)	Highest	
39	Partner with community	+	+	+	-	-	-	+	+	+	+	N	+	+	N	+	+	+	N	+	+	N	+	N	15(+) 3 (-)	Highest



Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results				
		(+)					(-)					(N)														
		P Political			A Administrative				S Social		T Technical			E Economic				E Environmental				L Legal				SUMMARY (EQUAL WEIGHTING)
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority	Potential Legal Challenge				
	groups such as local community organizations, including civic, business, town watch, faith-based, senior, special needs and tenant associations to promote emergency preparedness and mitigation efforts.																								5 (N)	
40	Develop geospatial and analytical tools to support community engagement, policy reform, and county and regional planning efforts.	+	-	+	-	-	-	+	+	+	N	N	+	+	+	+	+	+	+	+	+	+	+	N	16(+) 4 (-) 3 (N)	Highest
41	Develop a hazard event GIS database to help county and local emergency managers with hazard mitigation and other planning initiatives.	+	+	+	-	-	-	+	+	+	N	N	+	-	N	+	+	+	+	+	+	+	+	N	12(+) 4 (-) 7 (N)	Highest



SECTION 6: MITIGATION STRATEGY

Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results			
		(+)						(-)						(N)											
		P Political			A Administrative			S Social		T Technical			E Economic			E Environmental			L Legal			SUMMARY (EQUAL WEIGHTING)	Priority Ranking		
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority			Potential Legal Challenge	
42	Maintain and exercise continuity of government plan to enable the county government to provide critical services during an interruption of business.	+	+	+	-	-	-	+	N	+	N	N	+	+	N	+	N	N	N	+	+	+	-	11(+) 4(-) 8(N)	Highest
43	Implement seismic retrofits to vulnerable critical facilities.	-	-	-	-	-	-	-	-	-	+	N	-	-	-	+	+	N	+	-	N	N	-	4(+) 15(-) 3(N)	Moderate
44	Regulate development to reduce flood losses in vulnerable fluvial areas.	+	-	+	-	-	-	-	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	16(+) 7(-) 0(N)	Highest
45	Develop and maintain an outreach program to provide information and guidance to municipalities on their role in flood plain development.	+	+	+	-	-	-	+	+	+	+	+	N	+	+	N	+	+	+	+	N	+	N	15(+) 9(-) 5(N)	Highest
46	Support and utilize an advanced warning system that provides emergency text and email alerts to the public.	+	-	+	-	-	-	+	+	+	-	N	+	+	+	+	N	N	N	N	+	+	+	12(+) 5(-) 6(N)	Highest
47	Procure redundant power sources (portable generators).	+	N	+	-	-	-	+	+	+	+	+	+	-	N	+	+	N	N	+	N	N	+	12(+) 4(-)	Highest



Mitigation Action		PA STEEL CRITERIA CONSIDERATIONS																				Results			
		(+)						(-)						(N)											
		P Political		A Administrative				S Social		T Technical		E Economic		E Environmental				L Legal				SUMMARY (EQUAL WEIGHTING)	Priority Ranking		
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	Consistent w/ Federal Laws	State Authority	Existing Local Authority			Potential Legal Challenge	
																								7 (N)	
48	Maintain redundant power sources	+	N	+	-	-	-	+	+	+	+	+	-	N	+	+	N	N	+	N	N	+	N	12(+) 4 (-) 7 (N)	Highest
49	Develop and distribute educational information on hazards, emergency preparedness and fire prevention.	+	+	+	+	+	N	+	+	+	-	-	+	+	N	+	+	+	+	N	+	+	N	17(+) 2 (-) 7 (N)	Highest
50	Develop and distribute public outreach materials on water conservation.	+	+	+	+	+	N	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	N	20(+) 0 (-) 3 (N)	Highest



## SECTION 7: PLAN MAINTENANCE PROCEDURES

This section describes the system that Westmoreland County and all participating jurisdictions have established to monitor, evaluate, and update the mitigation plan; implement the mitigation plan through existing programs; and solicit continued public involvement for plan maintenance.

### 7.1 Monitoring Evaluating and Updating

The Westmoreland County Hazard Mitigation Working Group (Working Group) intends to remain intact as the organization responsible for monitoring, evaluating, and updating this plan. The Westmoreland County Hazard Mitigation Officer shall continue to act as the coordinator for the Working Group. Each participating jurisdiction is expected to retain a municipal hazard mitigation representative to support their jurisdiction's input to the monitoring, evaluating, and updating responsibilities identified in this section.

Table 7-1 identifies the members of the Hazard Mitigation Working Group as of the date of this plan update.

*Table 7.1-1 Westmoreland County Hazard Mitigation Plan Update Working Group Membership*

Name	Title	Department / Agency
Jack Ashton	Assistant Manager	Municipal Authority of Westmoreland County
Chris Bova	Deputy Director	Westmoreland County Planning Department
Darlene Bracken	EM Specialist	Pennsylvania Emergency Management Agency
Ron Cramer	LEMC	New Alexandria
Jeff Downs	Representative	West Penn Power
Brian Jones	Deputy Director	Westmoreland County Department of Public Safety
Ellen Keefe	Member	Westmoreland County Cleanways
Dave Knox	LEMC	Upper Burrell
Ted Kopas	County Commissioner	Westmoreland County
Richard Matason	Member	North Huntingdon Township
Jim Pillsbury	Member	Westmoreland Conservation District
Anthony Pologruto	Coordinator	Westmoreland County Department of GIS
Sandy Smythe	Finance	Westmoreland County Department of Public Safety
Daniel Stevens	Public Information Officer	Westmoreland County Department of Public Safety
Christopher Tantlinger	Hazard Mitigation Officer	Westmoreland County Department of Public Safety

It is recognized that individual commitments change over time, and it shall be the responsibility of each jurisdiction and its representatives to inform the Westmoreland HMP Officer of any changes in representation by formal letter. The HMP Officer will strive to keep the Working Group makeup as a uniform representation of planning partners and stakeholders within the planning area. The HMP Officer shall maintain the current membership of the Working Group on the Westmoreland County Hazard Mitigation Plan website (<http://westmorelandhmp.com>).

### 7.1.1 Monitoring

The Working Group shall be responsible for monitoring progress on, and evaluating the effectiveness of, the Plan, and documenting this in a progress report. At the discretion of the jurisdiction, and prior to progress meetings of the Working Group (detailed below), county and local Working Group representatives will collect and process the progress reports from the departments, agencies and organizations involved in implementing mitigation projects or activities identified in Section 6 of this Plan. The representatives will also make phone calls and conduct meetings with persons responsible for initiating and/or overseeing the mitigation projects to obtain progress information. Copies of any grant applications filed on behalf of any of the participating jurisdictions shall be provided to the Working Group. Further, the representatives shall obtain from their municipal supervisor/mayor or clerk any public comments made on the plan and provide to the Working Group for inclusion in the progress report.

The Working Group representatives shall be expected to document the following, as needed and appropriate:

- Hazard events and losses occurring in their jurisdiction including their nature and extent, and the effects that hazard mitigation actions have had on impacts and losses,
- Progress on the implementation of mitigation actions, including efforts to obtain outside funding for mitigation actions,
- Any obstacles or impediments to the implementation of actions,
- Additional mitigation actions believed to be appropriate and feasible,
- Public and stakeholder input and comment on the Plan.

Local Working Group representatives may use the progress reporting forms, Worksheets #1 and #3 in the FEMA 386-4 guidance document, to facilitate collection of progress data and information on specific mitigation actions.

### 7.1.2 Evaluating

The evaluation of the mitigation plan is an assessment of whether the planning process and actions have been effective, whether the Plan's goals are being reached, and whether changes are needed. The Plan will be evaluated on an as-needed basis to determine the effectiveness of the programs, and to reflect changes that may affect mitigation priorities or available funding.

**The status of the HMP will be discussed and documented at a plan review meeting of the Hazard Mitigation Working Group.** At least one month before the progress plan review meeting, the Westmoreland County HMP Coordinator will advise Working Group members of the meeting date, agenda and expectations of the members.

The Westmoreland County HMP Coordinator will be responsible for calling and coordinating the progress plan review meeting, and assessing progress toward meeting plan goals and objectives. These evaluations will assess whether:

- Goals and objectives address current and expected conditions.
- The nature or magnitude of the risks has changed.
- The HMP has been implemented into land use processes on the county and municipal levels
- Current resources are appropriate for implementing the HMP and if different or additional resources are now available



- Actions are cost effective
- Schedules and budgets are feasible
- Implementation problems, such as technical, political, legal or coordination issues with other agencies exist
- Outcomes have occurred as expected
- Changes in county or municipal resources have impacted plan implementation (e.g., funding, personnel, and equipment)
- New agencies/departments/staff should be included, including other local governments as defined under 44 CFR 201.6
- Documentation has been completed for any hazards that occurred during the last year

Specifically, the Working Group will review the mitigation goals, objectives, and activities/projects using performance-based indicators, including:

- New agencies/departments created that have authority to implement mitigation actions or are required to meet goals, objectives, and actions
- Project evaluation based on current needs of the mitigation plan
- Project completion regarding progress of proposed or ongoing actions
- Under/over spending regarding proposed mitigation action budgets
- Achievement of the goals and objectives
- Resource allocation to note if resources are required to implement mitigation activities
- Timeframe comments on whether proposed schedules are sufficient to address actions
- Budget notes (i.e., if budget basis should be changed or is sufficient)
- Lead/support agency commitment notes (if there is a lack of commitment on the part of lead or support agencies)-
- Resources regarding whether resources are available to implement actions
- Feasibility comment regarding whether certain goals, objectives, or actions prove to be unfeasible

Finally, the Working Group will evaluate how other programs and policies have conflicted or augmented planned or implemented measures, and shall identify policies, programs, practices, and procedures that could be modified to accommodate hazard mitigation actions (see the “Implementation of Mitigation Plan through Existing Programs” subsection later in this section). Other programs and policies can include those that address:

- Economic Development
- Environmental Preservation and Permitting
- Historic Preservation
- Redevelopment
- Health and/or Safety
- Recreation
- Land Use/zoning
- Public Education and Outreach
- Transportation

The Working Group may refer to the evaluation forms, Worksheets #2 and #4 in the FEMA 386-4 guidance document to assist in the evaluation process.

The Westmoreland County HMP Officer shall be responsible for preparing a HMP Progress Report, based on the provided local progress reports from each jurisdiction, information presented at the Working Group meeting, and other information as appropriate and relevant. These reports will provide data for the 5-year update of this HMP and will assist in pinpointing implementation challenges. By monitoring the implementation of the Plan, the Working Group will be able to assess which projects are completed, which are no longer feasible, and which projects may require additional funding.

This progress report shall apply to all planning partners who have provided input, and as such, shall be developed according to an agreed-upon format and with adequate allowance for input and comment of each planning partner prior to completion and submission to the State Hazard Mitigation Officer. Each planning partner will be responsible for providing this report to its governing body for their review.

During the Working Group meeting, the planning partners shall establish a schedule for the draft development, review, comment, amendment and submission of the HMP Progress Report to the State Hazard Mitigation Officer.

The Plan will also be evaluated and revised following any major disasters, to determine if the recommended actions remain relevant and appropriate. The risk assessment will also be revisited to see if any changes are necessary based on the pattern of disaster damages or if data listed in the Section 4.3 (Hazard Profiles) of this Plan has been collected to facilitate the risk assessment. This is an opportunity to increase the community's disaster resistance and build a better and stronger community.

### 7.1.3 Updating

Section 44 CFR 201.6.d.3 requires that local hazard mitigation plans be reviewed, revised as appropriate, and resubmitted for approval in order to remain eligible for benefits awarded under DMA 2000. It is the intent of the Westmoreland County Hazard Mitigation Working Group to update this Plan on a 5- year cycle from the date of initial plan adoption.

To facilitate the update process, the Westmoreland County HMP Officer, with support from the Working Group, shall hold a meeting 3 years from the date of Plan approval to develop and commence with the implementation of a detailed Plan update program. The Westmoreland County HMP Coordinator shall invite representatives from PEMA to this meeting to provide guidance on plan update procedures. This program shall, at a minimum, establish who shall be responsible for managing and completing the Plan update effort, what needs to be included in the updated plan, and a detailed timeline with milestones to ensure that the update is completed according to regulatory requirements.

At this meeting, the Working Group shall determine what resources will be needed to complete the update. The Westmoreland County HMP Coordinator shall be responsible for ensuring that needed resources are secured.

Following each 5- year update of the mitigation plan, the updated plan will be distributed for public comment. After all comments are addressed, the HMP will be revised and distributed to all municipal planning committee members, special purpose district participants and the Pennsylvania State Hazard Mitigation Officer.

## 7.2 Implementation for Mitigation Plan Through Existing Programs

It is the intention of the Working Group and participating jurisdictions to incorporate mitigation planning as an integral component of daily government operations. Working Group members will work with local government officials to integrate the newly adopted hazard mitigation goals and actions into the general

operations of government and partner organizations. Further, the sample adoption resolution (Appendix F) includes a resolution item stating the intent of the local governing body to incorporate mitigation planning as an integral component of government and partner operations. By doing so, the Working Group anticipates that:

- 1) Hazard mitigation planning will be formally recognized as an integral part of overall emergency management efforts;
- 2) Hazard mitigation planning will be formally recognized as an integral part of land use policies and mechanisms.
- 3) The Hazard Mitigation Plan and Comprehensive and Emergency Management Plans for both Westmoreland County and its municipalities will become mutually supportive documents that work in concert to meet the goals and needs of County residents; and
- 4) Duplication of effort can be minimized.

### **Integration of Mitigation into Ongoing and Future Planning Mechanisms**

As noted in Section 6, Westmoreland County has made a concerted effort to reduce their vulnerability to natural and non-natural hazards in its planning and in its daily operations since the development of the Westmoreland County 2009 All-Hazards Mitigation Plan. In addition to convening an annual meeting to summarize the progress of and update the mitigation strategy, the county and its jurisdictions have implemented numerous programs and projects to reduce impact of these hazards. These projects, programs, and regulations have reduced risk to natural and non-natural hazards and support the goals and objectives of this plan. It is the intent of the county and its participating municipalities to strengthen this focus on mitigation by continuing existing policies, and by further implementing the mitigation policies contained in this plan. Implementation actions will include incorporating the goals of the plan into ongoing planning, zoning, building, and engineering activities. Specifically, the county will urge municipalities to:

- Fund hazard mitigation projects or actions in operating budgets to the extent possible;
- Evaluate all construction projects to see if they meet the hazard mitigation goals and objectives;
- Use data and maps from this plan as supporting documentation in grant applications;
- Ensure local planning board or economic development groups identify hazard areas when assisting new businesses in finding a location;
- Look at mitigation actions when allocating funding for the municipal budgets;
- Incorporate hazard mitigation actions in daily operations and on all projects;
- Include hazard mitigation when updating municipal ordinances;
- Identify hazard areas in updates of comprehensive plans to identify land use issues; and
- Review the hazard mitigation plan prior to land use or zoning changes, and permitting or development decisions.

The information on hazard, risk, vulnerability and mitigation contained in this Plan is based on the best science and technology available at the time of the Plan's preparation. It is recognized by all participating jurisdictions that this information can be invaluable in making decisions under other planning programs, such as comprehensive, capital improvement, and emergency management plans. Existing processes and programs through which the mitigation plan should be implemented are described below.

The plan participants will make every effort to implement the relevant sections and or data contained in the hazard mitigation plan utilizing administrative, budgetary, regulatory processes as well as partnerships to the maximum extent.

### Administrative

Administrative processes include departmental or organizational work plans, policies or procedural changes. These could be addressed by the following departments:

- Public Works
- Building/Engineering
- Planning
- Emergency Services
- Health and Social Services
- Transportation
- Business and Economic Development

In addition, it will be recommended to include a reference of the HMP in the risk reduction section of the Westmoreland County Emergency Operations Plan and in Municipal Emergency Operations Plans. The updated Westmoreland County Master Plan will reference the All Hazards Mitigation Plan. Additional administrative measures may include the creation of unpaid internships to assist in hazard mitigation plan maintenance.

### Budgetary

In terms of budgetary processes, the county will review capital budgets and, if funding is available, include a line item for mitigation actions and will maximize mitigation aspects of proposed projects, and will encourage municipalities to do likewise.

### Regulatory

Regulatory measures, such as the creation of executive orders, ordinances, and other directives will be considered to support hazard mitigation in the following areas:

- Comprehensive Planning - Institutionalize hazard mitigation for new construction and land use
- Zoning and Ordinances
- Building Codes - Enforcement of codes or higher standard in hazard areas
- Capital Improvements Plan - Ensure that the person responsible for projects under this plan evaluates whether new construction is in a high-hazard area, flood plain, etc. so the construction is designed to mitigate the risk. Revise requirements for this plan to include hazard mitigation in the design of new construction.
- National Flood Insurance Program – Continue participation in this program and increase participation in Community Rating System Program
- Continue to implement storm water management plans.
- Prior to formal changes (amendments) to master plans, zoning, ordinances, capital improvement plans, or other mechanisms that control development, all above-mentioned plans must be reviewed to ensure they are consistent with the hazard mitigation plan

### Funding

The following sources shall be considered to fund eligible projects:

- Grants from federal or state government, nonprofit organizations, foundations, and private sources including Pre-Disaster Mitigation Program (PDM), Flood Mitigation Assistance Program (FMA), and the Hazard Mitigation Grant Program (HMGP-Stafford Act, Section 404).
- Research grant opportunities through U.S. Department of Housing and Urban Development's Community Development Block Grant (CDBG)

Other potential federal funding sources include:

- Stafford Act, Section 406 – Public Assistance Program Mitigation Grants
- Federal Highway Administration
- Catalog of Federal Domestic Assistance
- United States Fire Administration – Assistance to Firefighter Grants
- United States Small Business Administration Pre and Post-Disaster Mitigation Loans
- United States Department of Economic Development Administration Grants
- United States Army Corps of Engineers
- United States Department of Interior, Bureau of Land Management
- Other sources as yet to be defined

### Partnerships

The following opportunities for partnerships will be encouraged to provide a broader support and understanding of hazard mitigation:

### Existing Committees and Councils

- Local Government Committees:
  - Westmoreland County Airport Authority (<http://www.palmerairport.com/html/wcaa.html>)
  - Westmoreland County Housing Authority (<http://www.wchaonline.com/>)
  - Westmoreland County Transit Authority (<http://www.westmorelandtransit.com/>)
  - Municipal Authority of Westmoreland County (<http://www.mawc.org/>)
  - Westmoreland Conservation District (<http://www.wcdpa.com>)
  - Technical Services (<http://wcdpa.com/tech-services/>)

### Creative Partnerships for Funding and Incentives

- Public-Private Partnerships including utilities and businesses
- State Cooperation
- In-kind resources

### Working with other Federal, State, and Local Agencies

- Army Corps of Engineers (USACE)
- American Red Cross
- Department of Homeland Security (DHS)
- Federal Emergency Management Agency (FEMA)
- National Oceanic and Atmosphere Administration (NOAA)
- National Weather Service (NWS)
- Pennsylvania Department of Transportation (PENNDOT)
- Pennsylvania Department of Environmental Protection (PADEP)

- Pennsylvania State Police (PSP)
- United States Department of Agriculture (USDA)
- United States Department of Transportation (USDOT)
- United States Geological Service (USGS)
- Watershed Associations

During the plan evaluation process, the Working Group will identify additional policies, programs, practices, and procedures that could be modified to accommodate hazard mitigation actions, and include these findings and recommendations in the HMP Progress Report.

### 7.3 Continued Public Involvement

Westmoreland County and participating jurisdictions are committed to the continued involvement of the public in the hazard mitigation process. Therefore, the plan will be posted on the Westmoreland County website ([www.westmorelandhmp.com](http://www.westmorelandhmp.com)) and copies of the Plan will be made available for review during normal business hours at the Westmoreland County Library and the County Planning Department. Westmoreland County will make electronic copies of the plan available for local municipalities for public access.

The Westmoreland County HMP Coordinator will be responsible for receiving, tracking, and filing public comments regarding this HMP. The public will have an opportunity to comment on the Plan at the review meeting for the HMP and during the 5-year plan update. Westmoreland County will maintain the website and maintain an active link to collect public comments.

The Westmoreland County HMP Coordinator is responsible for coordinating the Plan evaluation portion of the meeting, soliciting feedback, collecting and reviewing the comments, and ensuring their incorporation in the 5-year plan update, as appropriate. Additional meetings may also be held as deemed necessary by the Working Group. The purpose of these meetings would be to provide an opportunity for the public to express concerns, opinions, and ideas about the mitigation plan.

The Working Group representatives shall be responsible to assure that:

- Public comment and input on the Plan, and hazard mitigation in general, are recorded and addressed, as appropriate. An opportunity to comment on the Plan will be provided directly on the project website, and provisions for public comment, in writing, will also be made. All public comments shall be addressed to:

Westmoreland County Department of Public Safety  
c/o Hazard Mitigation Plan Working Group  
911 Public Safety Road  
Greensburg, PA 15601

- Copies of the latest approved Plan are available for review at the municipal buildings along with instructions to facilitate public input and comment on the Plan.
- Appropriate links to the Westmoreland County Hazard Mitigation Plan website ([www.westmorelandhmp.com](http://www.westmorelandhmp.com)) will be maintained; the website will be maintained throughout the course of the project and if the 5- year update effort is underway; the draft plan will be posted on this site for public comment.



- Public notices will be made, as appropriate, to inform the public of the availability of the Plan, particularly during Plan update cycles.

The Westmoreland County HMP Coordinator shall ensure that:

- Public comment and input on the Plan, and hazard mitigation in general, are recorded and addressed, as appropriate
- The Westmoreland County HMP website is maintained and updated, as appropriate
- All public and stakeholder comments received are document and maintained
- Copies of the latest approved Plan are available for review at the County Library and at the County Planning Department, along with instructions to facilitate public input and comment on the Plan
- Public notices, including media releases, are made, as appropriate, to inform the public of the availability of the Plan, particularly during Plan update cycles.

## Section 8: PLAN ADOPTION

### 8.1 OVERVIEW

This section contains information regarding adoption of the Hazard Mitigation Plan by Westmoreland County and each participating jurisdiction.

#### 8.1.1 Plan Adoption by Local Governing Bodies

Adoption by the local governing bodies demonstrates the commitment of Westmoreland County and each participating jurisdiction to fulfill the mitigation goals and objectives outlined in the Plan. Adoption legitimizes the Plan and authorizes responsible agencies to execute their responsibilities.

Each participating jurisdiction will proceed with formal adoption proceedings when FEMA provides conditional approval of this Plan, known as Approval Pending Adoption (APA) and each participating jurisdiction understands that a conditional approval of the Plan will be provided for those municipalities that meet the planning requirements with the exception of the adoption requirement as stated above. The resolution to support adoption of the plan by each jurisdiction is included as Appendix F, Sample Resolution of Plan Adoption.

Following adoption or formal action on the Plan, each participating jurisdiction must submit a copy of the resolution or other legal instrument showing formal adoption (acceptance) of the Plan to the Westmoreland County Hazard Mitigation Coordinator. Westmoreland County will forward the executed resolutions to PEMA, and they will be subsequently forwarded to FEMA. Each participating jurisdiction understands that FEMA will transmit acknowledgement of verification of formal Plan adoption and the official approval of the plan to the mitigation plan coordinator.

In addition to being required by DMA 2000, adoption of the plan is necessary because:

- It lends authority to the plan to serve as a guiding document for all local and state government officials;
- It gives legal status to the plan in the event it is challenged in court;
- It certifies to the grant administrators that the plan's recommendations have been properly considered and approved by the governing authority and jurisdictions' citizens; and
- It helps to ensure the continuity of mitigation programs and policies over time because elected officials, staff, and other community decision makers can refer to the official document when making decisions about the community's future.

Source: FEMA. 2003. "How to Series"-*Bringing the Plan to Life* (FEMA 386-4).

<b>ASFPM</b>	Association of State Floodplain Managers
<b>BCA</b>	Benefit Cost Analysis
<b>BEF</b>	Base Flood Elevation
<b>CCE</b>	Cornell University Cooperative Extension
<b>CDC</b>	Center of Disease Control
<b>CEMP</b>	Comprehensive Emergency Management Program
<b>CERT</b>	County Emergency Response Team
<b>CFR</b>	Code of Federal Regulations
<b>CRREL</b>	Cold Regions Research and Engineering Laboratory
<b>CRS</b>	Community Rating System
<b>CPC</b>	Climate Prediction Center
<b>DEM</b>	Digital Elevation Model
<b>DFIRMs</b>	Digital Flood Insurance Rate Maps
<b>DI</b> s	Damage Indicators
<b>DHS</b>	Department of Homeland Security
<b>DMA 2000</b>	Disaster Mitigation Act of 2000
<b>DOD</b>	Degrees of Damage
<b>DPW</b>	Department of Public Works
<b>DR</b>	Disaster Declarations
<b>EFS</b>	Enhanced Fujita Scale
<b>EM</b>	Emergency Management
<b>EMC</b>	Emergency Management Coordinators
<b>EMS</b>	Emergency Management Services
<b>EOC</b>	Emergency Operation Center
<b>EOP</b>	Emergency Operation Plan
<b>FAA</b>	Federal Aviation Administration
<b>FD</b>	Fire Department
<b>FEMA</b>	Federal Emergency Management Agency
<b>FIA</b>	Flood Insurance Administration
<b>FIRM</b>	Flood Insurance Rate Map
<b>FIT</b>	Flood Information Tool
<b>FIS</b>	Flood Insurance Study
<b>FMA</b>	Flood Mitigation Assistance
<b>FY</b>	Fiscal Year

<b>GIS</b>	Geographic Information System
<b>HAZUS</b>	Hazards U.S.
<b>HAZUS-MH</b>	Hazards U.S. Multi-Hazard
<b>HAZMAT</b>	Hazardous Materials
<b>HMGP</b>	Hazard Mitigation Grant Program
<b>HMP</b>	Hazard Mitigation Plan
<b>ICLR</b>	Institute for Catastrophic Loss Reduction
<b>IPCC</b>	Intergovernmental Panel of Climate Change
<b>IT</b>	Information Technology
<b>LEPC</b>	Local Emergency Planning Committees
<b>MAWC</b>	Municipal Authority of Westmoreland County
<b>Mi</b>	Mile
<b>MGD</b>	Million Gallons per Day
<b>Mph</b>	Miles per Hour
<b>MRP</b>	Mean Return Period
<b>MSL</b>	Mean Sea Level
<b>N/A</b>	Not Applicable
<b>NA</b>	Not Available
<b>NCDC</b>	National Climate Data Center
<b>NEHRP</b>	National Earthquake Hazard Reduction Program
<b>NESEC</b>	Northeast States Emergency Consortium
<b>NESIS</b>	Northeast Snowfall Impact Scale
<b>NFIP</b>	National Flood Insurance Program
<b>NGDC</b>	National Geophysical Data Center
<b>NHC</b>	National Hurricane Center
<b>NID</b>	National Inventory of Dams
<b>NIMS</b>	National Incident Management System
<b>NLCD</b>	National Land Cover Dataset
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NPDP</b>	National Performance of Dams Program
<b>NRCS</b>	Natural Resource Conservation Service
<b>NSSL</b>	National Severe Storms Library
<b>NVRC</b>	Northern Virginia Regional Commission
<b>NWS</b>	National Weather Service

<b>%</b>	Percent
<b>%g</b>	Percent Acceleration Force of Gravity
<b>PADEP</b>	Pennsylvania Department of Environmental Protection
<b>PD</b>	Police Department
<b>PDM</b>	Pre-Disaster Mitigation Program
<b>PEMA</b>	Pennsylvania Emergency Management Agency
<b>PGA</b>	Peak Ground Acceleration
<b>POC</b>	Point of Contact
<b>Pop.</b>	Population
<b>RLP</b>	Repetitive Loss Property
<b>RCV</b>	Replacement Cost Value
<b>Q3</b>	Quality 3
<b>SHELDUS</b>	Spatial Hazard Events and Losses Database for United States
<b>SOG</b>	Standard Operating Guide
<b>SPC</b>	Storm Prediction Center
<b>SPI</b>	Standardized Precipitation Index
<b>Sq. Mi.</b>	Square mile
<b>SRL</b>	Severe Repetitive Loss
<b>SWOO</b>	Strengths, Weaknesses, Obstacles and Opportunities
<b>SWCD</b>	Soil and Water Conservation District
<b>TBD</b>	To Be Determined
<b>TRI</b>	Toxic Release Inventory
<b>TSTM</b>	Thunderstorm
<b>USACE</b>	U.S. Army Corps of Engineers
<b>USDA</b>	U.S. Department of Agriculture
<b>USDOT</b>	U.S. Department of Transportation
<b>USD</b>	U.S. Dollar
<b>USEPA</b>	U.S. Environmental Protection Agency
<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>USGS</b>	U.S. Geological Survey
<b>WCDPS</b>	Westmoreland County Department of Public Safety
<b>WCPD</b>	Westmoreland County Planning Department
<b>WMA</b>	Watershed Management Area
<b>WWTP</b>	Wastewater Treatment Plant

This resource defines terms that are used in or support the risk assessment document. These definitions were based on terms defined in documents included in the reference section, with modifications as appropriate to address the Westmoreland County specific definitions and requirements.

**100-year flood** – A flood that has a 1-percent chance of being equaled or exceeded in any given year. This flood event is also referred to as the base flood. The term "100-year flood" can be misleading; it is not the flood that will occur once every 100 years. Rather, it is the flood elevation that has a 1- percent chance of being equaled or exceeded each year. Therefore, the 100-year flood could occur more than once in a relatively short period of time. The 100-year flood, which is the standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management to determine the need for flood insurance.

**500-year flood** – A flood that has a 0.2-percent chance of being equaled or exceeded in any one year.

**Aggregate Data** – Data gathered together across an area or region (for example, census tract or census block data).

**Annualized Loss** – The estimated long-term value of losses from potential future hazard occurrences of a particular type in any given single year in a specified geographic area. In other words, the average annual loss that is likely to be incurred each year based on frequency of occurrence and loss estimates. Note that the loss in any given year can be substantially higher or lower than the estimated annualized loss.

**Annualized Loss Ratio** – Represents the annualized loss estimate as a fraction of the replacement value of the local building inventory. This ratio is calculated using the following formula: Annualized Loss Ratio = Annualized Losses / Exposure at Risk. The annualized loss ratio gauges the relationship between average annualized loss and building value at risk. This ratio can be used as a measure of relative risk between hazards as well as across different geographic units

**Asset** – Any man-made or natural feature that has value, including but not limited to people, buildings, infrastructure (such as bridges, roads, and sewer and water systems), and lifelines (such as electricity and communication resources or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks).

**At-Risk** – Exposure values that include the entire building inventory value in census blocks that lie within or border the inundation areas or any area potentially exposed to a hazard based on location.

**Base Flood** – Flood that has a 1-percent probability of being equaled or exceeded in any given year. It is also known as the 100-year flood.

**Base Flood Elevation (BFE)** – Elevation of the base flood in relation to a specified datum, such as the National Geodetic Vertical Datum of 1929. The BFE is used as the standard for the National Flood Insurance Program.

**Benefit** – Net project outcomes, usually defined in monetary terms. Benefits may include direct and indirect effects. For the purposes of conducting a benefit-cost analysis of proposed mitigation measures, benefits are limited to specific, measurable, risk reduction factors, including a reduction in expected property losses (building, content, and function) and protection of human life.

**Benefit-cost analysis (BCA)** – Benefit-cost analysis is a systematic, quantitative method of comparing the projected benefits to projected costs of a project or policy. It is used as a measure of cost effectiveness.



**Blizzard** - Characterized by low temperatures, wind gusts of 35 mph or more and falling and/or blowing snow that reduces visibility to 0.25 miles or less for an extended period of time (three or more hours).

**Building** – A structure that is walled and roofed, principally aboveground and permanently fixed to a site. The term includes a manufactured home on a permanent foundation on which the wheels and axles carry no weight.

**Building Codes** – Regulations that set forth standards and requirements for construction, maintenance, operation, occupancy, use, or appearance of buildings, premises, and dwelling units. Building codes can include standards for structures to withstand natural disasters.

**Buildup Index** - Cumulative numerical index derived from daily weather data, presumably indicates the moisture content in medium-driving forest fuels.

**Capability Assessment** – An assessment that provides a description and analysis of a community or state’s current capacity to address the threats associated with hazards. The capability assessment attempts to identify and evaluate existing policies, regulations, programs, and practices that positively or negatively affect the community or state’s vulnerability to hazards or specific threats.

**Climate** – The meteorological elements, including temperature, precipitation, and wind, that characterizes the general conditions of the atmosphere over a period of time (typically 30-years) for a particular region.

**Community Rating System (CRS)** – CRS is a program that provides incentives for National Flood Insurance Program communities to complete activities that reduce flood hazard risk. When the community completes specific activities, the insurance premiums of these policyholders in communities are reduced.

**Critical Facility** – Facilities that are critical to the health and welfare of the population and that are especially important following a hazard. Critical facilities include essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities. As defined for the Somerset County risk assessment, this category includes police stations, fire and/or EMS stations, major medical care facilities and emergency communications.

**Dam Failure** – A partial or complete breach in a dam, which impacts its integrity. Dam failures occur for a number of reasons such as flash flooding, inadequate size of spillways, mechanical failure of valves and other equipment, rodent activities in earthen dams, freezing and thawing cycles, earthquakes, and intentional destruction.

**Debris** – The scattered remains of assets broken or destroyed during the occurrence of a hazard. Debris caused by a wind or water hazard event can cause additional damage to other assets.

**Digital Elevation Model (DEM)** – U.S. Geological Survey (USGS) Digital Elevation Model (DEM) data files that are digital representations of cartographic information in a raster form. DEMs include a sampled array of elevations for a number of ground positions at regularly spaced intervals. These digital cartographic/geographic data files are produced by USGS as part of the National Mapping Program.

**Digital Flood Insurance Rate Maps (DFIRMs)** – These maps are used to calculate the cost insurance premiums, establish flood risk zones and base flood elevations to mitigate against potential future flood damages to properties.

**Displacement Time** – After a hazard occurs, the average time (in days) that a building’s occupants must operate from a temporary location while repairs are made to the original building due to damages resulting from the hazard.

**Disaster Mitigation Act of 2000 (DMA 2000)** – Law that requires and rewards local and state pre-disaster planning, promotes sustainability as a strategy for disaster resistance, and is intended to integrate state and local planning with the aim of strengthening state-wide mitigation planning.

**Drought** – A period of time without substantial rainfall that persists from one year to the next. Droughts can affect large areas and can impact areas that range from a few counties to several states. Along with decreasing water supplies for human consumption and use, droughts can kill crops, livestock, grazing land, edible plants, and even in severe cases, trees.

**Duration** – The length of time a hazard occurs.

**Earthquake** – A sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of earth’s tectonic plates.

**Erosion** – Wearing away of the land surface by detachment and movement of soil and rock fragments, during a flood or storm or over a period of years, through the action of wind, water, or other geologic processes.

**Erosion Hazard Area** – Area anticipated being lost to shoreline retreat over a given period of time. The projected inland extent of the area is measured by multiplying the average annual long-term recession rate by the number of years desired.

**Essential Facility** – A facility that is important to ensure a full recovery of a community or state following the occurrence of a hazard. These facilities can include: government facilities, major employers, banks, schools, and certain commercial establishments (such as grocery stores, hardware stores, and gas stations). For the Somerset County risk assessment, this category was defined to include schools, colleges, shelters, adult living and adult care facilities, medical facilities and health clinics, hospitals.

**Exposure** – The number and dollar value of assets that are considered to be at risk during the occurrence of a specific hazard.

**Extent** – The size of an area affected by a hazard or the occurrence of a hazard.

**Extra-Tropical Cyclone** - A group of cyclones defined as synoptic scale, low pressure, weather systems that occur in the middle latitudes of the Earth. These storms have neither tropical nor polar characteristics and are connected with fronts and horizontal gradients in temperature and dew point otherwise known as "baroclinic zones". These cyclones produce impacts ranging from cloudiness and mild showers to heavy gales and thunderstorms.

**Federal Emergency Management Agency (FEMA)** – Independent agency (now part of the Department of Homeland Security) created in 1978 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, response, and recovery.

**Fire Potential Index (FPI)** – Developed by USGS and the U.S. Forest Service (USFS) to assess and map the potential for a fire hazard over broad, defined areas. Based on such geographic information, national policy makers and “on-the-ground” fire managers established priorities for prevention activities in the

defined areas to reduce the risk of managed and wildfire ignition and spread. This index helps to shorten the time between fire ignition and initial attack by enabling fire managers to pre-allocate, target, and stage suppression forces to high-fire risk areas.

**Flash Flood** – A flood occurring with little or no warning where water levels rise at an extremely fast rate.

**Flood** – A general and temporary condition of partial or complete inundation of normally dry land areas resulting from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.

**Flood Depth** – Height of the flood water surface above the ground surface.

**Flood Elevation** – Height of the water surface above an established datum (for example, the National Geodetic Vertical Datum of 1929, North American Vertical Datum of 1988, or mean sea level).

**Flood Hazard Area** – Area shown to be inundated by a flood of a given magnitude on a map.

**Flood Information Tool (FIT)** – Hazard U.S. Multi-Hazard (HAZUS-MH) - related tool designed to process and convert locally available flood information to data that can be used by the HAZUS-MH Flood Module. The FIT is a system of instructions, tutorials and geographic information system (GIS) analysis scripts. When provided with user-supplied inputs (such as ground elevations, flood elevations, and floodplain boundary information), the FIT calculates flood depth and elevation for river and coastal flood hazards.

**Flood Insurance Rate Map (FIRM)** – Official maps of a community, prepared by the FEMA that shows both the special flood hazard areas and the risk premium zones applicable to the community.

**Flood Insurance Study (FIS)** – A study that provides an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations in a community or communities.

**Flood Mitigation Assistance (FMA) Program** – A program created as a part of the National Flood Insurance Report Act of 1994. FMA provides funding to assist communities and states in implementing actions that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other NFIP insurance structures, with a focus on repetitive loss properties.

**Floodplain** – Any land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that becomes inundated with water during a flood.

**Flood Polygon** – A geographic information system vector file outlining the area exposed to the flood hazard. HAZUS-MH generates this polygon at the end of the flood computations in order to analyze the inventory at risk.

**Freezing Rain** - Rain that falls as a liquid but freezes into glaze upon contact with the ground.

**Frequency** – A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average, and would have a 1-percent chance of happening in any given year. The reliability of this information varies depending on the kind of hazard being considered.

**Fuel Moisture (FM) Content** - The quantity of water in a fuel particle expressed as a percent of the oven-dry weight of the fuel particle. FM content is an expression of the cumulative effects of past and present weather events and must be considered in evaluating the effects of current or future weather on fire potential.

**Fujita Scale of Tornado Intensity** – Rates tornadoes with numeric values from F0 to F5 based on tornado wind speed and damage sustained. An F0 (wind speed less than 73 mph) indicates minimal damage such as broken tree limbs or signs, while an F5 (wind speeds of 261 to 318 mph) indicated severe damage sustained.

**Geology** – The scientific study of the earth, including its composition, structure, physical properties, and history.

**Geographic Information Systems (GIS)** – A computer software application that relates data regarding physical and other features on the earth to a database to be used for mapping and analysis.

**GIS Shape Files** – A type of GIS vector file developed by ESRI for their ArcView software. This type of file contains a table and a graphic. The records in the table are linked to corresponding objects in the graphic.

**Goals** – General guidelines that explain what you want to achieve. They are usually broad policy-type statements, long term in nature, and represent global visions.

**Hailstorm** – Hail is defined as a showery precipitation in the form of irregular pellets or balls of ice more than 5 millimeters in diameter, falling from a cumulonimbus cloud. Hail is a product of thunderstorms or intense showers. It is generally white and translucent, consisting of liquid or snow particles encased with layers of ice. Hail is formed within the higher reaches of a well-developed thunderstorm. When hailstones become too heavy to be caught in an updraft back into the clouds of the thunderstorm (hailstones can be caught in numerous updrafts adding a coating of ice to the original frozen droplet of rain each time), they fall as hail and a hailstorm ensues. A hailstorm is a storm associated with hail.

**Haines Index** - A fire weather index based on stability and moisture content of the lower atmosphere that measures the potential for existing fires to become large fires.

**Hazard** – A source of potential danger or an adverse condition that can cause harm to people or cause property damage. A natural hazard is a hazard that occurs naturally (such as flood, wind, and earthquake). A man-made hazard is one that is caused by humans (for example, a terrorist act or a hazardous material spill). Hazards are of concern if they have the potential to harm people or property.

**Hazards of Interest** – A comprehensive listing of hazards that may affect an area.

**Hazards of Concern** – Those hazards that have been analytically determined to pose significant risk in an area, and thus the focus of the particular mitigation plan for that area (a subset of the Hazards of Interest).

**Hazard Identification** – The process of identifying hazards that threaten an area.

**Hazardous Material Facilities** – Facilities housing industrial and hazardous materials, such as corrosives, explosives, flammable materials, radioactive materials, and toxins.

**Hazard Mitigation** – Sustained actions taken to reduce or eliminate the long-term risk and effects that can result from the occurrence of a specific hazard. For example, building a flood wall can protect an area from flooding.

**Hazard Mitigation Grant Program (HMGP)** – Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, HMGP is administered by FEMA and provides grants to states, tribes, and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster.

**Hazard Mitigation Plan** – A collaborative document in which hazards affecting the community are identified, vulnerability to hazards assessed, and consensus reached on how to minimize or eliminate the effects of these hazards.

**Hazard Profile** – A description of the physical characteristics of a hazard, including a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.

**Hazards U.S. (HAZUS)** – A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA. HAZUS was replaced by HAZUS-MH (see below) in 2003.

**Hazards U.S. – Multi-Hazard (HAZUS-MH)** – A GIS-based nationally standardized earthquake, flood, and wind loss estimation tool developed by FEMA.

**HAZUS-MH Risk Assessment Methodology** – This analysis uses the HAZUS-MH modules (earthquake, wind-hurricane and flood) to analyze potential damages and losses.

HAZUS-MH MR2: HAZUS-MH MR2 was released by FEMA in May 2006. This version operates on an ArcGIS 9.1 platform. The general building stock valuations are Replacement Cost Value from R.S. Means as of 2001.

HAZUS-MH MR3: HAZUS-MH MR3 was released by FEMA in December 2007. This version operates on an ArcGIS 9.2 platform. New data and tools released with MR3 include the following: (1) building valuations updated to R.S. Means 2006; (2) building counts based on census housing unit counts for RES1 (single-family dwellings) and RES2 (manufactured housing) instead of calculated building counts; and (3) new tools in the flood model that enable the user to import user-supplied flood maps and flood depth grids or generate a flood depth grid using specified DFIRM floodplain boundaries and digital elevation grids. Please refer to the HAZUS-MH MR3 manuals for additional updates.

**Heat Index (HI)** - The temperature the body feels when heat and humidity are combined. Higher humidity plus higher temperatures often combine to make us feel a perceived temperature that is higher than the actual air temperature.

**Heavy Snow** - Snowfall accumulating to 4" or more in depth in 12 hours or less; or snowfall accumulating to 6" or more in depth in 24 hours or less.

**High Potential Loss Facilities** – Facilities that would have a high loss associated with them, such as nuclear power plants, dams, and military installations.

**Hurricane** – An intense tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74 miles-per-hour or more and blow in a large spiral around a relatively calm center or

"eye." Hurricanes develop over the North Atlantic Ocean, northeast Pacific Ocean, or the South Pacific Ocean (east of 160°E longitude). Hurricane circulation is counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

**Hydraulics** – That branch of science, or of engineering, which addresses fluids (especially, water) in motion, its action in rivers and canals, the works and machinery for conducting or raising it, its use as a prime mover, and other fluid-related areas.

**Hydrography** – Pertains to the measurement and description of bodies of water, including oceans, lakes, and rivers.

**Hydrology** – Hydrology is concerned with the circulation of water and its constituents through the hydrologic cycle.

**Infrastructure** – The public services of a community that have a direct impact on the quality of life. Infrastructure includes communication technology such as phone lines or Internet access, vital services such as public water supplies and sewer treatment facilities, transportation system (such as airports, heliports; highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots; and waterways, canals, locks, seaports, ferries, harbors, dry docks, piers and regional dams).

**Ice Jam** - An accumulation of ice in a river that acts as a natural dam and can flood low-lying areas upstream. They occur when warm temperatures and heavy rains cause rapid snow melt.

**Ice Storm** – Term used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication.

**Intensity** – A measure of the effects of a hazard occurring at a particular place.

**Inventory** – The assets identified in a study region. It includes assets that can be lost when a disaster occurs and community resources are at risk. Assets include people, buildings, transportation, and other valued community resources.

**Keetch-Byram Drought Index (KBDI)** - A drought index designed for fire potential assessment. It is a number representing the net effect of evapotranspiration and precipitation in producing cumulative moisture deficiency in deep duff and upper soil layers.

**Level 1 Analysis** – A HAZUS-MH analysis that yields a rough estimate or preliminary analysis based on the nationwide default database included in HAZUS-MH. A Level 1 analysis is a great way to begin the risk assessment process and prioritize high-risk communities without collecting or using local data.

**Level 2 Analysis** – A HAZUS-MH analysis that requires the input of additional or refined data and hazard maps that will produce more accurate risk and loss estimates. Assistance from local emergency management personnel, city planners, GIS professionals, and others may be necessary for this level of analysis.

**Level 3 Analysis** – A HAZUS-MH analysis that yields the most accurate estimate of loss and typically requires the involvement of technical experts such as structural and geotechnical engineers who can modify loss parameters based on the specific conditions of a community. This level analysis will allow users to supply their own techniques to study special conditions such as dam breaks and tsunamis. Engineering and other expertise is needed at this level.



**Lifelines** – Critical facilities that include utility systems (potable water, wastewater, oil, natural gas, electric power facilities and communication systems) and transportation systems (airways, bridges, roads, tunnels and waterways).

**Lightning** – A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds or between a rain cloud and the ground.

**Loss Estimation** – The process of assigning hazard-related damage and loss estimates to inventory, infrastructure, lifelines, and population data. HAZUS-MH can estimate the economic and social loss for specific hazard occurrences. Loss estimation is essential to decision making at all levels of government and provides a basis for developing mitigation plans and policies. It also supports planning for emergency preparedness, response, and recovery.

**Lowest Floor** – Under the NFIP, the lowest floor of the lowest enclosed area (including basement) of a structure. For the HAZUS-MH flood model, this information can be used to assist in assessing the damage to buildings.

**Magnitude** – A measure of the strength of a hazard occurrence. The magnitude (also referred to as severity) of a given hazard occurrence is usually determined using technical measures specific to the hazard. For example, ranges of wind speeds are used to categorize tornados.

**Major Disaster Declarations** – Post-disaster status requested by a state’s governor when local and state resources are not sufficient to meet disaster needs. It is based on the damage assessment, and an agreement to commit state funds and resources to the long-term recovery. The event must be clearly more than the state or local government can handle alone.

**Master Plan** – A document, also known as a “general plan”, covering the entire geographic area of a community and expressing community goals and objectives. The plan lays out the vision, policies, and strategies for the future of the community, including all of the physical elements that will determine the community’s future development. This plan can discuss the community’s desired physical development, desired rate and quantity of growth, community character, transportation services, location of growth, and citing of public facilities and transportation. In most states, the comprehensive plan has no authority in and of itself, but serves as a guide for community decision-making.

**Mean Return Period (MRP)** – The average period of time, in years, between occurrences of a particular hazard (equal to the inverse of the annual frequency of exceedance).

**Mitigation Actions** – Specific actions that help achieve your goals and objectives.

**Mitigation Goals** – General guidelines that explain what you want to achieve. They are usually broad policy-type statements, long term, and represent global visions.

**Mitigation Objectives** – Strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific and measurable.

**Mitigation Plan** – A plan that documents the process used for a systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in a state or community. The plan includes a description of actions to minimize future vulnerability to hazards. This plan should be developed with local experts and significant community involvement.

**National Flood Insurance Program (NFIP)** – Federal program created by Congress in 1968 that makes flood insurance available in communities that enact minimum floodplain management regulations in 44 Code of Federal Regulations (CFR) §60.3.

**Nor’Easter** – Named for the strong northeasterly winds blowing in ahead of the storm, are also referred to as a type of extra-tropical cyclones (mid-latitude storms, or Great Lake storms. A Nor’Easter is a macro-scale extra-tropical storm whose winds come from the northeast, especially in the coastal areas of the Northeastern U.S. and Atlantic Canada.

**Objectives** – Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific and measurable.

**Occupancy Classes** – Categories of buildings used by HAZUS-MH (for example, commercial, residential, industrial, government, and “other”).

**Ordinance** – A term for a law or regulation adopted by local government.

**Parametric Model** – A model relating to or including the evaluation of parameters. For example, HAZUS-MH uses parametric models that address different parameters for hazards such as earthquake, flood and wind (hurricane). For example, parameters considered for the earthquake hazard include soil type, peak ground acceleration, building construction type and other parameters.

**Planimetric** – Maps that indicate only man-made features like buildings.

**Planning** – The act or process of making or carrying out plans; the establishment of goals, policies and procedures for a social or economic unit.

**Post-disaster mitigation** – Mitigation actions taken after a disaster has occurred, usually during recovery and reconstruction.

**Presidential Disaster Declaration** – A post-disaster status that puts into motion long-term federal recovery programs, some of which are matched by state programs, and designed to help disaster victims, businesses, and public entities in the areas of human services, public assistance (infrastructure support), and hazard mitigation. If declared, funding comes from the President’s Disaster Relief Fund and disaster aid programs of other participating federal agencies.

**Preparedness** – Actions that strengthen the capability of government, citizens, and communities to respond to disasters.

**Priority Hazards** – Hazards considered most likely to impact a community based on frequency, severity, or other factors such as public perception. These are identified using available data and local knowledge.

**Provided Data** – The databases included in the HAZUS-MH software that allow users to run a preliminary analysis without collecting or using local data.

**Probability** – A statistical measure of the likelihood that a hazard event will occur.

**Public education and outreach programs** – Any campaign to make the public more aware of hazard mitigation and mitigation programs, including hazard information centers, mailings, public meetings, etc.

**Q3 Flood Zone Data** – FEMA flood data that delineate the 100- and 500-year flood boundaries. The Q3 Flood Data are digital representations of certain features of FEMA’s Flood Insurance Rate Map (FIRM) product, intended for use with desktop mapping and GIS technology.

**Recovery** – The actions taken by an individual or community after a catastrophic event to restore order and lifelines in the community.

**Regulation** – Most states have granted local jurisdictions broad regulatory powers to enable the enactment and enforcement of ordinances that deal with public health, safety, and welfare. These include building codes, building inspections, zoning, floodplain and subdivision ordinances, and growth management initiatives.

**Recurrence Interval** – The average time between the occurrences of hazardous events of similar size in a given location. This interval is based on the probability that the given event will be equaled or exceeded in any given year.

**Repetitive Loss Property** – A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least \$1,000 each have been paid within any 10-year period since 1978.

**Replacement Value** – The cost of rebuilding a structure. This cost is usually expressed in terms of cost per square foot and reflects the present-day cost of labor and materials to construct a building of a particular size, type and quality.

**Resolutions** – Expressions of a governing body’s opinion, will, or intention that can be executive or administrative in nature. Most planning documents must undergo a council resolution, which must be supported in an official vote by a majority of representatives to be adopted. Other methods of making a statement or announcement about a particular issue or topic include proclamations or declarations.

**Resources** – Resources include the people, materials, technologies, money, etc., required to implement strategies or processes. The costs of these resources are often included in a budget.

**Risk** – The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard occurring and resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to occurrence of a specific type of hazard. Risk also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

**Risk Assessment** – A methodology used to assess potential exposure and estimated losses associated with priority hazards. The risk assessment process includes four steps: (1) identifying hazards, (2) profiling hazards, (3) conducting an inventory of assets, and (4) estimating losses.

**Risk Factors** – Characteristics of a hazard that contribute to the severity of potential losses in the study area.

**Riverine** – Of or produced by a river (for example, a riverine flood is one that is caused by a river overflowing its banks).

**Saffir-Simpson Scale** – This scale categorizes or rates hurricanes from 1 (Minimal) to 5 (Catastrophic) based on their intensity. It is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as

storm surge values are highly dependent on the slope of the continental shelf and the shape of the coastline, in the landfall region.

**Scale** – A proportion used in determining a dimensional relationship; the ratio of the distance between two points on a map and the actual distance between the two points on the earth’s surface.

**Scour** – Removal of soil or fill material by the flow of floodwaters. This term is frequently used to describe storm-induced, localized, conical erosion around pilings and other foundation supports where the obstruction of flow increases turbulence.

**Special Facility** – A facility of special importance to a particular community.

**Special Flood Hazard Area (SFHA)** – An area within a floodplain having a 1-percent or greater chance of flood occurrence in any given year (that is, the 100-year or base flood zone); represented on FIRMS as darkly shaded areas with zone designations that include the letter “A” or “V.”

**Stafford Act** – The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law (PL) 100-107 was signed into law on November 23, 1988. This law amended the Disaster Relief Act of 1974, PL 93-288. The Stafford Act is the statutory authority for most Federal disaster response activities, especially as they pertain to FEMA and its programs.

**Stakeholder** – Stakeholders are individuals or groups, including businesses, private organizations, and citizens, that will be affected in any way by an action or policy.

**State Hazard Mitigation Officer (SHMO)** – The representative of state government who is the primary point of contact with FEMA, other state and Federal agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

**Structure** – Something constructed (for example, a residential or commercial building).

**Study Area** – The geographic unit for which data are collected and analyzed. A study area can be any combination of states, counties, cities, census tracts, or census blocks. The study area definition depends on the purpose of the loss study and in many cases will follow political boundaries or jurisdictions such as city limits.

**Substantial Damage** – Damage of any origin sustained by a structure in a SFHA, for which the cost of restoring the structure to its pre-hazard event condition would equal or exceed 50 percent of its pre-hazard event market value.

**Thunderstorm** - A local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder. It forms from a combination of moisture, rapidly rising warm air and a force capable of lifting air such as a warm and cold front, a sea breeze, or a mountain.

**Topographic** – Map that shows natural features and indicate the physical shape of the land using contour lines based on land elevation. These maps also can include man-made features (such as buildings and roads).

**Topography** – The physical features of a surface area including relative elevations and the position of natural and man-made features.

**Tornado** – A violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm (or sometimes as a result of a hurricane) and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly.

**Transportation Systems** – One of the lifeline system categories. This category includes: airways (airports, heliports, highways), bridges, tunnels, roadbeds, overpasses, transfer centers; railways (tracks, tunnels, bridges, rail yards, depots), and waterways (canals, locks, seaports, ferries, harbors, dry docks, piers).

**Tropical Cyclone** - A generic term for a cyclonic, low-pressure system over tropical or sub-tropical waters containing a warm core of low barometric pressure which typically produces heavy rainfall, powerful winds and storm surge.

**Tropical Depression** - An organized system of clouds and thunderstorms with a defined surface circulation and maximum sustained winds of less than 38 mph. It has no “eye” (the calm area in the center of the storm) and does not typically have the organization or the spiral shape of more powerful storms.

**Tropical Storm** - An organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds between 39 to 73 mph

**Utility Systems** – One of the lifeline systems categories. This category includes potable water, wastewater, oil, natural gas, electric power facilities and communication systems.

**Vulnerability** – Description of how exposed or susceptible an asset is to damage. This value depends on an asset’s construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power. If an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect affects can be much more widespread and damaging than direct affects.

**Vulnerability Assessment** – Evaluation of the extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability assessment should address impacts of hazard occurrences on the existing and future built environment.

**Watershed** – Area of land that drains down gradient (from areas of higher land to areas of lower land) to the lowest point; a common drainage basin. The water moves through a network of drainage pathways, both underground and on the surface. Generally, these pathways converge into streams and rivers, which become progressively larger as the water moves downstream, eventually reaching an estuary, lake, or ocean.

**Wildfire** – Any instance of uncontrolled burning in grasslands, forests, and brush land. It is further defined as an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

**Wildland/Urban Interface (WUI)** - The area where houses and wildland vegetation coincide. Interface neighborhoods are found all across the U.S., and include many of the sprawling areas that grew during the 1990s.

**Wildland Fire Assessment System (WFAS)** - An internet-based information system that provides a national view of weather and fire potential, including national fires danger, weather maps and satellite-derived “Greenness” maps.

**Wind Chill Index (WCI)** - The temperature your body feels when the air temperature is combined with the wind speed. It is based on the rate of heat loss from exposed skin caused by the effects of wind and cold.

**Windstorm** – A storm characterized by high wind velocities; associated with cyclonic storms (e.g. hurricanes), thunderstorms and tornadoes.

**Zone** – A geographical area shown on a National FIRM that reflects the severity or type of flooding in the area.

**Zoning Ordinance** – Designation of allowable land use and intensities for a local jurisdiction. Zoning ordinances consist of two components: a zoning text and a zoning map.



This appendix includes documents used during the development of the Westmoreland County Hazard Mitigation Plan Update.

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## **APPENDIX B: LOCAL PLAN REVIEW CROSSWALK**

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This appendix includes the Local Mitigation Plan Review Tool that demonstrates how the Westmoreland County Hazard Mitigation Plan meets the regulations in 44 CFR §201.6. States and FEMA Mitigation Planners are afforded the opportunity in this document to provide feedback to the community.



## LOCAL MITIGATION PLAN REVIEW TOOL

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The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

<b>Jurisdiction:</b> Westmoreland County	<b>Title of Plan:</b> Westmoreland County Multi-Jurisdictional Multi Hazard Mitigation Plan Update	<b>Date of Plan:</b> August 2014
<b>Local Point of Contact:</b> Christopher Tantlinger	<b>Address:</b> 911 Public Safety Road Greensburg, PA 15601	<b>E-Mail:</b> ctantlin@co.westmoreland.pa.us
<b>Title:</b> HAZMAT Coordinator		
<b>Agency:</b> Westmoreland County Department of Public Safety		
<b>Phone Number:</b> (724) 600-7349		

<b>State Reviewer:</b> Ernest Szabo	<b>Title:</b> State HM Planner	<b>Date:</b> September 12, 2014
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<b>FEMA Reviewer:</b> Alison Kearns	<b>Title:</b> Community Planning Specialist	<b>Date:</b> November 17, 2014
<b>Date Received in FEMA Region</b> <i>(insert #)</i>	1 <sup>st</sup> Submission: September 19, 2014 2 <sup>nd</sup> Submission: November 14, 2014	
<b>Plan Not Approved</b>		
<b>Plan Approvable Pending Adoption</b>	November 17, 2014	
<b>Plan Approved</b>		

**SECTION 1:  
REGULATION CHECKLIST**

**INSTRUCTIONS:** The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan</b> (section and/or page number)	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT A. PLANNING PROCESS</b>				
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Section 1.3.1 Section 3 Appendix C Appendix D	X		
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Section 3.4 Appendix E	X		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 3.5 Appendix E	X		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 3.6 Section 4.1 Section 7.2 Appendix A	X		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 7.3	X		
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Section 7.1	X		
<b>ELEMENT A: REQUIRED REVISIONS</b>				
<b>ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT</b>				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Section 4.3	X		

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Section 4.3	X		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Section 4.3	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 4.3.5	X		
<b><u>ELEMENT B: REQUIRED REVISIONS</u></b>				
<b>ELEMENT C. MITIGATION STRATEGY</b>				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 5.4.7 Section 5.5.1 Section 5.6.5 Section 5.7.1 Section 5.8 Section 5.9	X		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 3.6.4 Section 5.2	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 6.3	X		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 6.4	X		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 6.6	X		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Section 5 Section 7.2	X		
<b><u>ELEMENT C: REQUIRED REVISIONS</u></b>				
<b>ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION</b> (applicable to plan updates only)				

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 2.4.6 Section 2.5	X		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 3.3 Section 6.2 Section 6.3	X		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Section 6.5	X		
<b><u>ELEMENT D: REQUIRED REVISIONS</u></b>				
<b>ELEMENT E. PLAN ADOPTION</b>				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Section 8			
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Section 8			
<b><u>ELEMENT E: REQUIRED REVISIONS</u></b>				
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</b>				
F1.				
F2.				
<b><u>ELEMENT F: REQUIRED REVISIONS</u></b>				

## SECTION 2: PLAN ASSESSMENT

### A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

#### Element A: Planning Process

##### **Strengths:**

- 1) There was great representation from local jurisdictions for such a large county (49 out of 65). Continue to seek input and request participation in the future.
- 2) The inclusion of County Departments that have a role in mitigation was commendable. A perfect combination of varying interests (safety, planning, public works, commissioners, conservation, municipal authority, etc.).
- 3) The planning process was well documented and having a specific description of what the county was responsible for and what the contractor assisted with was a fantastic addition. It showed that it was a collaborative planning process and also allows the responsible parties for the next plan update to see how the tasks were assigned in the past.
- 4) The demographics provided are especially useful in mitigation planning as well as the land use description. Be sure to keep updated data on this information as it changes in the future.
- 5) The description of population “flows” is something that is overlooked in mitigation planning and having this information is highly valuable. The graphic presented with commuters is a good representation of the ingress and egress of populations, which is important since the risk and vulnerability changes depending on the time of the day as was seen in the earthquake profile.

#### Element B: Hazard Identification and Risk Assessment

##### **Opportunities for Improvement:**

- 1) Include more specific flood maps, especially concerning vertical information (depth grids) as it becomes available. Knowing where the water will reach spatially is important, but how high it may come up in just as important. Mapping this information, especially on a smaller scale map, would be beneficial particularly for vulnerable areas.
- 2) Include (or share in the planning process) the website for the Map Service Center where flood information is attainable for the County.



- 3) Continue to seek more accurate soil information for higher quality of HAZUS analyses for the earthquake model.
- 4) Having national scaled information is good for an overarching understanding of hazards (i.e. drought maps, extreme temperature maps) but be sure to really specify how this information is relevant to Westmoreland County.
- 5) In the Wildfire Profile, it was mentioned that gathering data about structures (i.e. construction materials, roofing) would be beneficial to determine particular vulnerabilities and I agree completely. Consider incorporating this information into HAZUS, although there is no wildfire model, it would be easy to produce inventory tables and maintain the information. It would also greatly improve the results in wind models for hurricanes/tropical storms or small scale wind events.
- 6) Monitor availability of Risk MAP regulatory and non-regulatory products (flood maps, depth grids, flood insurance studies, flood risk reports, changes since last FIRM, areas of mitigation interest).

**Strengths:**

- 1) Incorporating possible changes to hazards from climate change was commendable and an example that could be used Region-wide. Excellent job in addressing that risk is dynamic and will change in the future. Continue to monitor new information to support this section as it is released.
- 2) The quality of GIS data used in HAZUS analyses was again, commendable and an example that could be used Region-wide. The output for GIS programs is only as good as the information being inputted and having data at the census block level, user defined facilities, information for specific structures and updated demographics is only going to make the assessment more accurate. Continue to gather, quality check, and input this information as it becomes available.
- 3) The scientific descriptions for each hazard with a wide array of resources will be helpful to any user of this document.
- 4) Identifying that there is room for improvement in each hazard profile is a wise choice and suggesting ideas for future data incorporation will not only help the planning process in the future but ensure that the plan will continue to progress and grow.
- 5) Radon profile was well evaluated and wisely incorporated EPA information, including action thresholds, which is truly beneficial to have in a mitigation plan.

## Element C: Mitigation Strategy

### **Opportunities for Improvement:**

- 1) When mitigation projects or actions are completed, consider including “success stories” to share experiences and promote mitigation.
- 2) Continue to monitor historic relevant areas of Westmoreland, which was well described in the Community Profile, and produce mitigation strategies or actions to best protect those resources.
- 3) Include more information about the “growing greener” and “important conservation” projects and their possible mitigation benefit to Westmoreland County.
- 4) Continue to research and monitor funding or technical programs to assist with mitigation in the county. Describe what programs Westmoreland has been able to take advantage of.

### **Strengths:**

- 1) The consideration of so many county/community plans and the steps to integrate hazard mitigation, especially smart flood decisions, is commendable. Continue to represent mitigation and resilient communities in the wide array of community planning efforts. Consider maintaining a “planning schedule” to track opportunities as they arise in the County.
- 2) This plan update gave the participating jurisdictions a great opportunity to identify the capabilities they currently have and be aware of the gaps that exist. The capabilities listed were well thought out and included a wide array of important information, such as GIS or HAZUS capacities. Consider having local jurisdictions strive to fill more of their “gaps”.
- 3) The mitigation actions are well documented and provide relevant information that is necessary in order to take action on. Continue to monitor and update this list as mitigation progresses in the County.
- 4) Keeping a list of Federal mitigation programs, activities, and initiatives is a great idea but like what mentioned before in the opportunities for improvement, continue to keep this updated. Continue to research new programs and opportunities as they become available.

## Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

### **Strengths:**

- 1) By following through the monitoring and evaluating process that was described it is going to ensure that mitigation progresses in Westmoreland County. Be sure to follow through with tasks identified. This will also make the planning process for the next plan update much more convenient as documentation and efforts were maintained throughout the entire 5 year lifecycle of the plan.

## B. Resources for Implementing Your Approved Plan

### **Guides and Resources:**

(These might be helpful if interested)

FEMA's Plan Integration Guide (available online soon)

FEMA's FY13 HMA Unified Guidance (available on FEMA library) (to be updated for FY15)

FEMA's Mitigation Ideas (available on FEMA library)

Beyond the Basics Website (<http://mitigationguide.org/>)

Region 3 Risk MAP (<http://riskmap3.com/>)

Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation  
([http://ipcc-wg2.gov/SREX/images/uploads/SREX-All\\_FINAL.pdf](http://ipcc-wg2.gov/SREX/images/uploads/SREX-All_FINAL.pdf))

Training Topics:

- GIS (ex. ESRI Courses)

- HAZUS (ex. EMI Professional or Practitioner Track)

- BCA Toolkit

- Floodplain Management (ex. L-273)

- NFIP/ CRS (ex. E-278)

- Mitigation Planning (ex. G-318 or G-393)

- HMA Application Development (ex. L-212, L-213, L-214)

**SECTION 3:  
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)**

**INSTRUCTIONS:** For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were ‘Met’ or ‘Not Met,’ and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET											
#	Jurisdiction Name	Jurisdiction Type (city/borough/township/village, etc.)	Plan POC	Email	Phone	Requirements Met (Y/N)					
						A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
1	Allegheny	Township	Lee Schumaker	<a href="mailto:schumaker@alleghenytownship.net">schumaker@alleghenytownship.net</a>	724.842.4641						
2	Avonmore	Borough	Cindy Rupert	<a href="mailto:Cindy_rupert@comcast.net">Cindy_rupert@comcast.net</a>	724-639-8323						
3	Cook	Township	Debbie Rhodes	<a href="mailto:cooktwp@lhtot.com">cooktwp@lhtot.com</a>	724.593.7471						
4	Delmont	Borough	Kirk Nolan	<a href="mailto:Nolans4@comcast.net">Nolans4@comcast.net</a>	412.370.0851						
5	Derry	Borough	Stephen Kozar	<a href="mailto:Kozar41@verizon.net">Kozar41@verizon.net</a>	724.640.7994						
6	Derry	Township	Stephen Kozar	<a href="mailto:Kozar41@verizon.net">Kozar41@verizon.net</a>	724.640.7994						
7	Donegal	Borough	Sarah Harkom	<a href="mailto:donegalboro@gmail.com">donegalboro@gmail.com</a>	724.593.6222						
8	Donegal	Township	Thomas Stull	<a href="mailto:supervisors@lhtot.com">supervisors@lhtot.com</a>	724.593.2619						

**MULTI-JURISDICTION SUMMARY SHEET**

#	Jurisdiction Name	Jurisdiction Type (city/borough/township/village, etc.)	Plan POC	Email	Phone	Requirements Met (Y/N)					
						A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
9	East Huntingdon	Township	James King	<a href="mailto:Kingff74@easthuntingdonfd.com">Kingff74@easthuntingdonfd.com</a>	412.558.0241						
10	East Vandergrift	Borough	Anthony Buyny	<a href="mailto:afbuyny@comcast.net">afbuyny@comcast.net</a>	724.567.1783						
11	Fairfield	Township	Vaughn Tantlinger	<a href="mailto:Fairfield1773@verizon.net">Fairfield1773@verizon.net</a>	724.235.2140						
12	Greensburg	City	Les Harvey	<a href="mailto:lharvey@greensburg.org">lharvey@greensburg.org</a>	724.838.4305						
13	Hempfield	Township	Bruce Beitel	<a href="mailto:bbeitel@hempfieldtp.org">bbeitel@hempfieldtp.org</a>	724.834.7232 ex127						
14	Hunker	Borough	Lisa Colarusso	<a href="mailto:hunkerborough@verizon.net">hunkerborough@verizon.net</a>	724.925.3731						
15	Irwin	Borough	Mary Benko	<a href="mailto:irwinmanager@comcast.net">irwinmanager@comcast.net</a>	724.864.3100						
16	Latrobe	City	Alexander Graziani	<a href="mailto:agraziani@cityoflatrobe.com">agraziani@cityoflatrobe.com</a>	724.787.6520						
17	Laurel Mountain	Borough	Susan Crouse	<a href="mailto:winterset@verizon.net">winterset@verizon.net</a>	724.238.6844						
18	Ligonier	Borough	Paul Fry	<a href="mailto:ligonierborodpw@comcast.net">ligonierborodpw@comcast.net</a>	724.238.9852						
19	Ligonier	Township	John Beaufort	<a href="mailto:john@beaufortservices.com">john@beaufortservices.com</a>	None						
20	Loyalhanna	Township	Kenneth Walters	<a href="mailto:loyalhannatwp@comcast.net">loyalhannatwp@comcast.net</a>	724.433.8843						
21	Madison	Borough	Patricia Walt	<a href="mailto:madboro@comcast.net">madboro@comcast.net</a>	none						
22	Manor	Borough	Jeremy Dixon	<a href="mailto:Noxid21@comcast.net">Noxid21@comcast.net</a>	412.612.2461						

**MULTI-JURISDICTION SUMMARY SHEET**

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						A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
23	Monessen	City	John Harhai	<a href="mailto:jharhai@cityofmonessen.com">jharhai@cityofmonessen.com</a>	724.684.9712						
25	Mount Pleasant	Borough	Duane Hutter	<a href="mailto:mptduane@zoominternet.net">mptduane@zoominternet.net</a>	724.689.9162						
26	Murrysville	Municipality	Jim Morrison	<a href="mailto:jmorrison@murrysvillegov.org">jmorrison@murrysvillegov.org</a>	724.327.2100						
27	New Alexandria	Borough	Ron Cramer	<a href="mailto:navfd@hotmail.com">navfd@hotmail.com</a>	724.787.4719						
28	New Kensington	City	Dennis Scarpiniti	<a href="mailto:cityclerk@newkensington.org">cityclerk@newkensington.org</a>	724.337.3342						
29	New Stanton	Borough	Robert Coletta	<a href="mailto:boocoletta@hotmail.com">boocoletta@hotmail.com</a>	724.771.0010						
30	North Belle Vernon	Borough	John Garber	<a href="mailto:chiefbennyj@aoil.com">chiefbennyj@aoil.com</a>	724.880.8159						
31	North Huntingdon	Township	Gene Komondor	<a href="mailto:emc@nhtpa.us">emc@nhtpa.us</a>	724.864.3172						
32	North Irwin	Borough	Lucien Bove	<a href="mailto:boveengineering@comcast.net">boveengineering@comcast.net</a>	724.925.9269						
33	Oklahoma	Borough	Ronald Norton	<a href="mailto:oklaboro@verizon.net">oklaboro@verizon.net</a>	724.567.7124						
34	Penn	Township	Bruce Light	<a href="mailto:brucelight@penn.twp.org">brucelight@penn.twp.org</a>	724.744.2171 ex.201						
35	Rostraver	Township	Ronald Olschon	<a href="mailto:olschon@verizon.net">olschon@verizon.net</a>	724.350.6209						
36	Salem	Township	Kenneth Trumnetta	None	724.668.7500						
37	Scottdale	Borough	Angelo Pallone	<a href="mailto:Scottdale.boro@zoominternet.net">Scottdale.boro@zoominternet.net</a>	724.887.8220						



**MULTI-JURISDICTION SUMMARY SHEET**

#	Jurisdiction Name	Jurisdiction Type (city/borough/township/village, etc.)	Plan POC	Email	Phone	Requirements Met (Y/N)					
						A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
38	Sewickley	Township	Paul Rupnik, Jr.	<a href="mailto:prupnikjr@gmail.com">prupnikjr@gmail.com</a>	724.989.2703						
40	South Greensburg	Borough	Clentin Martin	<a href="mailto:clentin@comcast.net">clentin@comcast.net</a>	724.289.3084						
41	South Huntingdon	Township	Richard Gates	<a href="mailto:southhuntingdontwp@comcast.net">southhuntingdontwp@comcast.net</a>	724.872.8474						
42	Southwest Greensburg	Borough	Corry Sheffler	<a href="mailto:swgreensburg@gmail.com">swgreensburg@gmail.com</a>	724.834.0360						
43	St. Clair	Township	Kristina Clark	<a href="mailto:Stclair522@comcast.net">Stclair522@comcast.net</a>	814.446.5211						
44	Unity	Township	Michael O'Barto	mobatro@unitytownship.org	724.539.2546 ex.13						
45	Upper Burrell	Township	David Knox	<a href="mailto:knoxda@gmail.com">knoxda@gmail.com</a>	412.670.3044						
46	Washington	Township	Scott Slagle	sslagle@wtpolice.com	724.727.3410						
47	West Leechburg	Borough	Lucien Bove	boveengineering@comcast.net	724.925.9269						
48	West Newton	Borough	Mary Popovich	mayor@marypopovichwn.org	724.972.3779						
49	Youngwood	Borough	Robert Coletta	boocoletta@hotmail.com	724.771.0010						

This appendix includes meeting agendas, sign-in sheets and minutes (where applicable and as available) for Steering Committee and municipal planning group meetings convened during the development of the Westmoreland County Hazard Mitigation Plan Update. Documentation of public and stakeholder meetings and outreach may be found in Appendix E, “Public and Stakeholder Outreach Documentation”.



FEMA



Making communities safer through action

# AGENDA

## HAZARD MITIGATION WORKING GROUP

**December 9, 2008**

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**Introductions:** Taylor, Tamm, Tantlinger, Benish, Kopas, Stevens, Smythe, Bracken, Kimmel, Pillsbury, Strong

**What is the status of our plan?:** Our plan needs to meet PEMA FEMA standard and must address strategies of mitigation and highest vulnerabilities. We need more descriptive hazard identifications and profilings – natural hazards.

**Discuss how the guidance can be met:** If we follow the FEMA guidance and provide the text necessary whether we have all the substantiating data in and complete it will be accepted, just report it as being acquired. Look to Lycoming and Lebanon County for some ideas.

### **Looking ahead & tasking components of the plan:**

Grants are available and should be looked into. You can count overhead and benefits and they can be in kind with prorated use of facilities to meet the federal match. WE would probably be looking at 2010-2012. Randy may be able to tap into this for GIS data.

**Next Meeting & Location:** January 6, 2008

# **AGENDA notes**

## **HAZARD MITIGATION WORKING GROUP**

**October 5, 2010**

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### **Introductions:**

Smythe, Strong, Tantlinger, *Excused* Stevens & Kelvington

### **Review:**

Commonwealth Hazard Mitigation Plan – Draft, *Was provided to GIS Department Network per Randy Strong*

Westmoreland County Hazard Mitigation Plan – Layout *Loaded into the State Tool Kit but not ready for review at this time per Baker contractor*

GOA handout – Highlight parallels - *Listed for review*

2010 Hazard Mitigation Assistance Unified Guidelines Eligible Activities – *Grant list Grant programs listed and emailed to HMWG*

### **Flood Mapping:**

Westmoreland flood Hazard Mapping Sheet was provided by FEMA.- Review *ongoing by GIS Department and available on public GIS site.*

### **Best Practices in Mitigation:**

Export Borough – Murrysville Municipality *Export Flood Control Project initiated attended Ground Breaking*

Ligonier Borough – Slide Show *Provided to State Hazard Mitigation Office*

### **Hazards & Mitigations**

- Irwin, Greensburg - Structure Collapses Wind & snow
- Sutersville & Derry – Train Incidents - Pedestrians
- Mt Pleasant Twp – Weather related traffic Death - turnpike
- Rostraver – Mine Subsidence
- Salem Twp, Fairfield – Well Drilling Incidents
- Hempfield, Murrysville – Hazardous Materials
- 4 Municipalities eligible for HAZARD MITIGATION GRANT PROGRAM (HMGP) Letter of Intent/Pre-Application February 2010 Snow Storm “Winter Tempest”- Allegheny Township, Donegal Township, Murrysville, Ligonier Borough
- Latrobe and Murrysville – Drug take back Initiative.

### **Next Meeting & Location:**

Tuesday April 12, 2011 1000-1200

# **AGENDA notes**

## **HAZARD MITIGATION WORKING GROUP**

**April 12, 2011**

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### **Introductions:**

Tantlinger, Strong, EXCUSED: prior engagement: Smythe, Stevens

### **Review:**

GIS Department now has maps available for all municipalities with intersections listed on a spreadsheet to identify current properties within the flood zones of new maps, also including centroids. Discussed the Jeannette project being pursued by the American Streams organization and inclusion into the HMP.

Strength through Resiliency

Flood Insurance, Flood Insurance, Flood Insurance

FEMA Letter

Examples of Hazard Mitigation Fact Sheet

New Update forms disseminated to municipalities

Incident reports database review, Dollar analysis for Latrobe Hazmat transportation accidents.

### **Flood Mapping:**

Maps received from the Map Service Center MSC dated 23 Mar 2011. GIS department will be providing these on the county and planning website. Disc will reside at courthouse and public safety under Westmoreland County, 42129C A\_DFIRM, Cust#2174675, Ord# 60787828 <http://msc.fema.gov>

### **Best Practices in Mitigation:**

Review FEMA website and spreadsheet of the top 50 hazard mitigation projects ranging from concrete box culverts to hazardous material impact planning study of a local watershed.

### **Hazards & Mitigations**

WCGEWG began meetings in December and exploring hazards that may be associated with well drilling and gas exploration. Discussed idea that hazard mitigation funding may be available or worth pursuing based on hazards that communities may identify as the drilling becomes more and more prevalent.

Appalachian Gateway project Environmental Assessment disc is now available from the Federal Energy Regulatory Commission

### **Next Meeting & Location:**

Discussion on the November 14, 2014 HMP renewal and an 18 month preparation period starting May of 2013 to return to quarterly meetings.

Tuesday September 6, 2011 10:00 am is next semiannual meeting.

# AGENDA Notes

## HAZARD MITIGATION WORKING GROUP

**September 6, 2011**

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### **Introductions:**

Chris Bova, Sandy Smythe, Christopher Tantlinger, Dan Stevens

### **Review:**

1. *New Hazard Mitigation Plan Tool Kit – Reviewed the template provided for the tool kit and the components.*
2. *Current project list- Reviewed Table M in HMP on Project actions and priorities.*
3. *Actions and goals – reviewed Commonwealth GOA highlighted information.*
4. *Membership review-Reviewed names in HMP and discussed advising the Commissioners of getting new individuals involved in the WG. Bova would discuss with some colleagues and after discussion Dan Stevens decided that we should wait until the March meeting to draft a formal request to the Commissioners then.*
5. *Reviewed Community Assessment Survey and Contact Sheets provided by Baker Corporation for implementing HMP updates.*
6. *Reviewed some municipality's resolutions and actions.*
7. *Reviewed rejection letter to Donegal Township.*

### **Flood Mapping:**

8. *County Site review- Reviewed County website and HMP as currently on website and discussed updates. Reviewed GIS maps of specific municipalities.*

### **Best Practices in Mitigation:**

6. *National review site- discussed the Best practices in HM and stories available on the website.*

### **Hazards & Mitigations**

9. *Table PRIB Review-presented table of Westmoreland County being the number one county reporting Natural Hazard Events.*

### **Next Meeting & Location:**

Discussion on the November 14, 2014 HMP renewal and an 18 month preparation period starting May of 2013 to return to quarterly meetings.

Tuesday March 27, 2012 10:00 am is next semiannual meeting.

Meeting duration 1hour 22 minutes.



# AGENDA

## HAZARD MITIGATION WORKING GROUP

**March 27, 2012**

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**Introductions:** *Chris Bova, Ryan Kelvington, ChrisTantlinger, Jim Pillsbury, Randy Strong, Dan Stevens*

### **Review:**

*Benefit cost analysis course to be held May 15-16 FEMA L-276 described and made aware that a prerequisite is required to attend and this is the first step in HM grant process and very important to local municipalities.*

*Ludy - Kondolf white paper-100yr floodplain “what does it mean” discussed how the 100yr floodplain is widely misunderstood and illustrated in the paper.*

*CRS-emphasis, discussed the Community Rating system and how the BCA class and providing projects will improve insurance costs in community for the NFIP.*

*Frank Ankrum-“Hempfield Twp” Bruce Bietel- awareness item for information requests.*

*Irene & Lee-reviewed Letters of Intent and projects that have been requested for funding.*

*Silver Jackets- Leveraging all agencies was discussed and website reviewed on the program.*

*Recent Eligible projects were reviewed on county action matrix and state LOI.*

*Jim Pillsbury stated that his agency is being tasked to go to municipalities to educate people about flooding in conjunction with the DCED and PSAPS.*

*It was discussed that South Huntingdon Twp is expanding and in need of being able to connect electronically to take advantage of the e-grant system.*

*Discussion on the 537 plans and the Unity Latrobe municipal consideration for overflow treatment and will make approximately 2000 taps available within Unity that will create development that will need to be considered in hazard mitigation.*

*Washington Township bridge that is closed down that borders Murrysville was discussed and whether it would be eligible for HM funds based on erosion or flooding and if it should be listed as a project opportunity, it is in the planning phase at this time.*

*PEMA website reviewed to navigate how HAZARD Mitigation has been put to the top of Programs and Services on the site and that local websites should promote Hazard Mitigation on their sites as well.*

*A request from the Commissioners to request members for the Working Group will be made at the September meeting.*

### **Flood Mapping:**

*Progress by the GIS department to have all the new FEMA maps on the County website and is used and available to the various agencies and the public. Discussion on how*

*some mortgage companies are sending erroneous letters to homeowners not even citing the correct map number and stating that they are in the flood plain. NRCS has been writing letters to validate exclusions and misrepresentations when warranted.*

### **Best Practices in Mitigation:**

*Best Practices Portfolio-see how others do it and get the funding. Referred group to the portfolio area to gain insight on HM projects that have been funded.*

### **Hazards & Mitigations**

*Hempfield issue reviewed on a small stream in Wendover section and that this was put forth to the PEMA Western office to determine if it was eligible, and PEMA HQ returned email stating that this type of project would be the last line to be funded through HM grants.*

### **Next Meeting & Location:**

Discussion on the November 14, 2014 HMP renewal and an 18 month preparation period starting May of 2013 to return to quarterly meetings.

Tuesday September 24, 2012 10:00 am is next semiannual meeting.

# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**June 28, 2012**

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### **Introductions:**

#### **Review:**

*Intent to Participate Form & Letter*

*Official Planning Application*

*Requirements*

*Roles*

*Development*

*Implications*

### **Hazard Mapping:**

### **Best Practices in Mitigation:**

### **Hazards & Mitigations**

### **Next Meeting & Location:**

# AGENDA

## HAZARD MITIGATION WORKING GROUP

**January 16, 2013**

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### **Introductions:**

*Ron Cramer, LEMC of New Alexandria introduced as new member of working group. Chris Bova, Michael Brooker, Chris Tantlinger in attendance. Excused-Ted Kopas, Sandy Smythe, Dan Stevens. Under Review-Ryan Kelvington, Henry Fitz.*

### **Review:**

*Quarterly Report discussed referencing no funds expended at this time, with costs for RFP advertising and in-kind services to be referenced on next report. A combined time report will be created and placed on Q drive for updated reporting.*

*RFP-discussed regarding time for questions and sending to consultants directly for review after advertisement is placed in Latrobe Bulletin publication.*

*Grant-reviewed local share amount and to be fulfilled with time expended for Bova and Tantlinger.*

*Correction in Jim Pillsbury email.*

*Email was sent to all previous members to express their participation on HMWG.*

*Question-does state report their participation on the quarterly report or do we capture that in our report.*

*Orientation package to be sent to Ron Cramer.*

*Utilities- Water, Electric, Gas to be asked to participate in working group.*

*Request for participation in gathering hazard articles to be place in municipal folders.*

*Director Brooker expressed interns be considered to capture hazard events for last ten years and Tantlinger asked that they be plotted by GIS.*

*Website information on "County's Hazard Mitigation Role in Planning and Preparedness be promoted on Public Safety and Planning Website.*

*Act 13 money is within the General Fund for Public Safety and investigate if those funds could be used to fund Hazard Mitigation Projects or matches.*

*Conference call for quarterly reporting was noted and participated in by Stevens, Bova, and Tantlinger.*

*Excused-Ted Kopas, Sandy Smythe, Dan Stevens. Under Review-Ryan Kelvington, Henry Fitz.*

### **Flood Mapping:**

*Report-no new items*

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### **Best Practices in Mitigation:**

*Report-review internet for latest mitigations*

*Reviewed four past mitigation references that potentially could have been funded in Murrysville, Jeannette, Donegal Township, North Irwin.*

### **Hazards & Mitigations**

*Report-NOCO in Youngwood in reference to flammable liquid storage next to local Fire Department.*

### **Next Meeting & Location:**

*February 13, 2013*

*Westmoreland County Department of Public Safety*

# AGENDA - Notes

## HAZARD MITIGATION WORKING GROUP

**February 15, 2013 0900-1030**

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**Introductions:** Dave Knox, Dan Stevens, Chris Tantlinger, Anthony Pologruto, Chris Bova, Michael Brooker, EXCUSED- Darlene Bracken, Ron Cramer, Sandy Smythe

### **Review:**

*RFP company review & questions:* Conferred with Solicitor, Eugene Ferace and Deputy Public Safety Director Brian Jones (previous to meeting). [REDACTED]

*Grant Quarterly Report:* Reviewed Quarterly Report provided to PEMA/FEMA

*Former working Group member review:* Read names of non-respondents and individuals that opted out. Discussion on having Henry Fitz be retained as County Engineer, Director Brooker acknowledged to reach out with Greg McCloskey of Public Works. All members currently on working group were reviewed and discussion on their availability was reviewed.

*Stakeholder outreach:* Consideration of an official outreach letter to distribution lists applicable to this endeavor and state the level of commitment. Dan Stevens referenced a theme to the group and will work on a letter.

Reviewed Community Assessment Survey and Contact sheet information to be presented at kickoff meeting in April.

G393: Presented information from recent FEMA course about identifying hazards and reviewing resources. (Course CD is available)

### **Hazard (previously flood) Mapping:**

*Report-*A request to create a hazard map layer with natural and technological and manmade hazards available to planning and public safety departments. The two categories would cover about 15 layers mirrored in the current Hazard Mitigation Plan outline and be created to overlay with current County GIS capabilities. Dan Stevens requested that it be an annual archive and not edit capable once locked down without administrative rights. Two tabs could be created for these layer categories. Anthony will investigate and Chris Bova asked that pipeline information and other similar hazards be incorporated (which would fall into the hazardous materials designation)



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## **Best Practices in Mitigation:**

*Report*-No specific local items listed but reinforcement of the PEMA/FEMA websites to gain the latest best practices listed.

## **Hazards & Mitigations**

*Report* - Discussion on Latrobe City pervious sidewalks and storm water initiatives, Mt. Pleasant water gardens and mitigation of storm water, City of Greensburg parking lot with mitigation of storm water construction.

Dave Knox discussed local area concerns in Upper Burrell including project opportunities for generators and street flooding. He will work closely with his elected officials and public works to identify issues.

Dan Stevens discussed "charging station" initiative and will be disseminating Letter of Intent and information for Presidential Disaster Declaration 4099 by next LEMC meeting. (Picture presented of a mobile NYPD mobile charging station)

Anthony requested that aerial photography update (currently 2003) for the county be considered as a project and discussion as an inventory visual asset database of dwellings library.

## **Next Meeting & Location:**

Be prepared to discuss the FEMA Local Mitigation Plan Crosswalk and review the results of the RFP submittals.

Wednesday, March 13, 2013 – Public Safety 9-1-1

# AGENDA - notes

## HAZARD MITIGATION WORKING GROUP

March 13, 2013

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**Introductions:** Excused: Bova, Ashton, Stevens; Attending: Brooker, Pologruto, Tantlinger

### **Review:**

*RFP's received review& questions criteria: Reviewed all criteria as applied to each proposal.*

*Director Brooker was presented with all proposals and will review comparitives. Comparitives were given based on our original bid opening and the proximity of other plans this consultant has completed on time and in budget.*

*No known connection is known at this time. Michael would like to send letters to the municipalities that have participated and those that have not and would like to see a Commissioner letter also be sent to emphasize the program. He asked for a list of those participating and involved. Anthony reviewed the proposals and agreed to the selection process criteria.*

*Michael expressed the consideration that interns could be paid from the grant money and perhaps have one shadow at Public Safety and Planning department for the two summers that the planning may be engaged. He also asked where the "kick off" meeting would be held. I had suggested the IU. A meeting will be held tomorrow to review with Public Safety Team members to gather further recommendation information. Discussion about details within the RFP were considered as topics for tomorrow's meeting, and Anthony requested that a criteria link be made in the proposal spreadsheet.*

*FEMA Crosswalk: We reviewed the FEMA crosswalk submitted with the 2009 original plan and demonstrated the detail and corrective actions taken to have the plan eventually passed by FEMA.*

*Mitigation Ideas FEMA publication: Presented the 88 page FEMA information book and discussed making it available to all Local Emergency Management Coordinators to present to their elected officials.*

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## **Hazard (previously flood) Mapping:**

*Report: Anthony presented information on the pictometry product for picture flights over the County and the potential use to determine the structure locations that could be affected by hazards, specifically flooding and compare to 2003 flight picture information. He will provide information relative to the ongoing negotiations with that project. He also stated that he is continuing consideration on the "hazard tab" to the County GIS map that will help in providing countywide visibility as related to hazards.*

## **Best Practices in Mitigation:**

*Report: Nothing to report at this time*

## **Hazards & Mitigations**

*HMGP 5% Initiative: An email was recently sent to all LEMC from Dan Stevens about the generator initiative and will be a topic of upcoming meetings with that group. Discussion about also the County looking at submitting a LOI in regards to generators, with a discussion on his "recharging station" initiative and the generators at gas stations discussions. Michael provided an idea about having the public works look at where the majority of receipts are from in regards to gas supply and partnering with that entity to ensure gas availability by looking at prompting a generator to be installed at that location.*

## **Next Meeting & Location:**

Wednesday, April 10, 2013 – Public Safety 9-1-1 0900hrs

Meetings have been on the Public Safety newsletter which is linked to the County website.

# AGENDA Notes

## HAZARD MITIGATION WORKING GROUP

April 10, 2013

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### Introductions:

Darlene Bracken, Ron Cramer, Dan Stevens, Chris Tantlinger, Chris Bova, Anthony Pologruto

### Review:

*Review consultant recommendation criteria. Reviewed criteria spreadsheet for making recommendation to board of Commissioners to select the consultant for the update.*

*Discuss goals and objectives of current plan. Attempted to locate on new County website and the site has no current link to the Hazard Mitigation Plan. The webmaster needs also to be made aware of other items not being accurate on the site.*

*Identify possible venues for Municipal & Stakeholder Kick Off meeting. Two sites were identified: the Intermediate Unit and WCCC. It was suggested that the consultant when chosen have two kick off meetings, one in the afternoon and one in the evening to try to capture all the municipalities. Also if possible have the selected consultant provide a short synopsis of the upcoming kickoff meetings at the Local Elected Officials seminar providing details and highlight the items that will be requested.*

*Plans for Local Elected Officials Seminar information: covered in the previous discussion.*

### Hazard (previously flood) Mapping:

*Report*

*Anthony reported that he has ordered the newest version of HAZUS at no cost and is interested in using the information and would like to attend a class on the use of the product.*

*It was suggested that he attend EMI in MD to take the course. PEMA representative expressed interest in the course also. E296 on HAZUS as related to DMA 200 class was researched on the FEMA website.*

*Anthony discussed the benefits of one of the consultants that would provide an ALL Edit capability to the mapping products.*

*Anthony announced that May 15<sup>th</sup> Pictometry will be making a presentation to the GIS department. Dan Stevens stated that the ownership of the data needs to be checked on who will have proprietary rights to the product. He also stated that a collaborative effort should be made to have many other County departments that would benefit from the pictometry information to each consider drawing from their budgets because it would be useful to all. Anthony stated that there would be 3 flights in 9 years and disaster flights would be available such as the Hempfield Tornado. He also clarified that it is not classified as building "footprints" but as "outlines" due to the angle resolutions taken.*

*It was reported that a layer should be included that could show DCED grants due to the nature of these actions contributing to mitigating some storm water and possible flood related issues in the communities.*

### **Best Practices in Mitigation:**

*Report*

*No reports of mitigations other than the Ligonier Borough power point that is available for review on a minor mitigation action on mill creek.*

### **Hazards & Mitigations**

*HMGP 5% Initiative LOI by Ligonier Borough*

*Inquiries from Sutersville, Vandergrift, Ligonier Township, West Newton*

*Report*

*Ligonier LOI 4099 request was circulated at the meeting and discussion of the other municipalities that included generator projects and river gauge. Darlene stated that the USGS sponsored project may not have access to HM funds due to it being a federal agency. The USGS meeting is at 6pm at West Newton.*

### **Next Meeting & Location:**

*Thursday, May 9, 2013 – Public Safety 9-1-1*

# AGENDA Notes

## HAZARD MITIGATION WORKING GROUP

May 9, 2013 0900-1000

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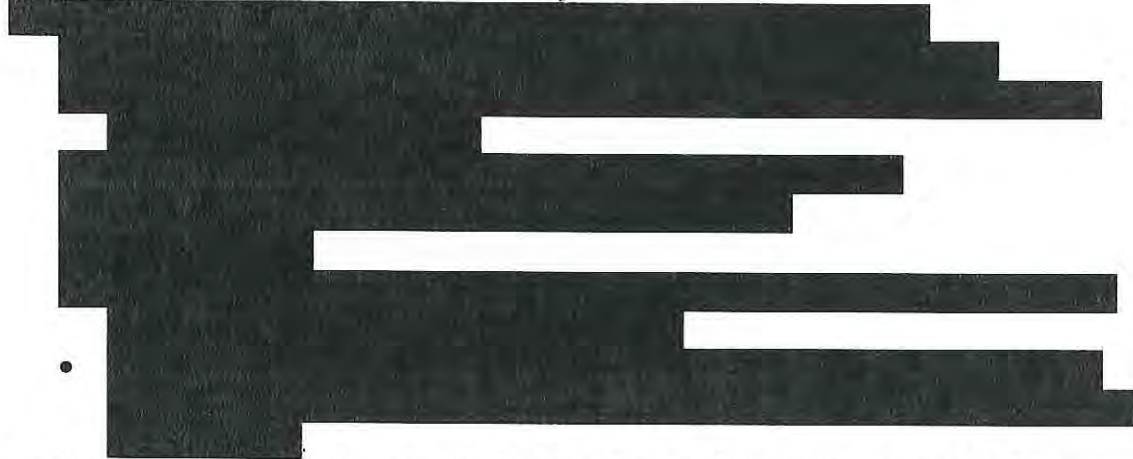
### Introductions:

Sandy Smythe, Brian Jones, Chris Tantlinger

### Review:

*Review previous notes of meeting.*

*Reviewed the status of contractor selection for RFP.*



*Look at Regional approach to outreach of meetings with a singular central kickoff meeting at WCCC or IU but will confer with contractor for possible recommendations.*

### Hazard (previously flood) Mapping:

*Report*

*Reviewed Anthony's pictometry information for May 15<sup>th</sup> presentation and will pursue Dan S. comments on how to best proceed with Pictometry if selected. Public safety will try to have a representative at the meeting.*

*Discussed how Commodity Flow Study could be implemented into Hazard Map Tabs on County GIS map and looked at other Hazard Tabs. Brian Jones asked if we would have access to the mapping information and would we be able to collaborate when needed without any departmental restrictions or concerns.*

### Best Practices in Mitigation:

*Report*

*Discussed the Trout Unlimited project on Mill Creek and how it works with stream preservation and is protected by high water events.*



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## **Hazards & Mitigations**

*Reconfirmed previous DR4099 submittals and Brian Jones stated that Tony Enrico wants to fill out a form and Mt Pleasant Borough wants to look at funding an early warning siren and how they might be able to do that with an emergency generator for alerting for residents to go to sheltering. It was discussed that this may not be a "mitigation" project but could be looked into depending on what the use could be classified.*

## **Next Meeting & Location:**

Wednesday, June 12, 2013 – Public Safety 9-1-1

# AGENDA Notes

## HAZARD MITIGATION WORKING GROUP

**June 12, 2013 0915-1015**

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### **Introductions:**

*Excused-Pillsbury, Jones, Smythe, Knox, Bracken, Pologruto  
Attendance-Bova, Downs, Stevens, Tantlinger*

### **Review:**

*Selection Process of Consultant and status discussed by Chris Bova and notice made that all inquiries about the selection process be directed to Solicitor by any entity requesting additional information. A request to execute a document has been sent by the Solicitor to consultant Tetra Tech before the award is fully granted.*

*Dan Stevens asked that a representative by at the next HMWG meeting if they fully execute the document.*

### **Hazard (previously flood) Mapping:**

*Review County Current Map-Pologruto is reported to be at a GIS conference and is currently working on some mapping products for the County map. No report given.*

### **Best Practices in Mitigation:**

*Acceptable Levels of Risk-USFA United States Fire Administration Coffee Break training distributed to illustrate how mitigation is integrated in to fire service planning and budgeting.*

*National Preparedness Report 2013, FEMA-Distributed handout on all major mitigation highlights and talking points from the 87 page report:*

- *Risk-Self Assessment Tool RSAT*
- *Supply Chain integrity and security risk management strategies*
- *Community Resilience-whole community partners and preparedness message*
- *Long term vulnerability reduction – FEMA plans cover 71% of US population at this time.*
- *\$252 million in grant funds is attributed to \$502 million in avoided flood losses.*
- *Case Study New Orleans prevented \$68 billion 2011 Hurricane Isaac with only a \$14.6 billion price tag.*
- *FEMA's risk mapping and Flood Insurance Rate maps are used and estimated 30 million times annually to define flood zones.*

- *Threat and Hazard Identification THIRA new planning guidance to more clearly understand community needs*
- *EPCRA planning will be integrating new mitigation centric measures in 2014*
- *US Army Corps of Engineers have installed approximately 200 generators at hospitals, water treatment plants, etc.*
- *Health and Social services and mitigation of behavioral health affects from disasters now a Federal foundation effort.*
- *Local Hospital resilience stemming from a 2006 loss of \$20 million dollars led to zero flood damage and remained open in 2011 Tropical Storm Lee due to mitigation funding and efforts.*
- *Discussed the "Core Capabilities" in the National Preparedness Goal Hazard Mitigation has four capabilities as discussed above.*
- *West Penn Power representative stated how they have offered many different programs that relate directly to mitigation goals and was asked to consider sharing strategies, goals, actions, and products that may assist in defining hazard areas and issues. Also consideration of sharing mapping data that is general in nature was discussed. Description of how hardening of West Penn Power assets can be partnered with community and municipal goals that could affect and garner grant funding possibilities.*
- *Pipeline hazard and proximity to residences discussed as an issue recently being discussed in the media and public need to know issues.*

*Recent site visit by Homeland Security Protective Service advisor, Region 13 CIKR representative and HMO to MWAC involved learning how the authority receives, collects, filters, stores, and distributes water from their three filtration plants in three counties, illustrating how integral hazards are to adjoining counties and the entire closed municipal water system. Discussion on how a "loss of pool" event can have an effect on distribution and is a current hazard assessment and how back-up power initiatives are in place to help maintain power at their facilities.*

*Local Elected Officials Seminar-presentation on Hazard Mitigation was given in May at WCCC.*

## **Hazards & Mitigations:**

*West Newton flood gauge project described and community meeting presentation by USGS discussed.*

*Generator requests for grants discussed in reference to the latest letters of intent to PEMA/FEMA to provide shelter and responder agency generators.*

## **Next Meeting & Location:**

*Wednesday, July 10, 2013 – Public Safety 9-1-1*



# AGENDA Notes

## HAZARD MITIGATION WORKING GROUP

July 10, 2013 0915-1015

### Introductions:

*Chris Bova, Jim Pilsbury, Anthony Pologruto, Chris Tantlinger*

### Review:

*State Hazard Mitigation Plan update take away items including climate change; cyber terrorism; mass food/animal food contamination; invasive species 9 (currently being advertised on radio); lock and dam failure (a catastrophic failure mentioned by Jim Pilsbury would have a very wide ranging impact on the area) The County owns dams that would fall under that category (Anthony has worked with the County engineer on some of those issues); integration of County commodity flow studies of hazardous materials discussed and new initiatives including THIRA Threat and Hazard Identification and Risk Assessment discussed. One item of interest is the piglet disease (Pologruto to provide article content) that is being discussed by some media reports. Household Hazardous Waste (HHW) collection and its effects on public health and water contamination and the current disposal venue. 911 has been receiving calls recently on how to dispose of these items or requests made on the HAZMAT website. Discussion on maybe having community "dumpster days" integrate HHW. Next Westmoreland Cleanways HHW collection scheduled October 5, 2013 WCCC-Youngwood. HAZUS and flood hazard mapping data being compiled by FEMA. Review of the State Hazard Mitigation Plan Survey and request for disaster photos to illustrate mitigations, visit [www.pemahmp.com](http://www.pemahmp.com). Discussion on Land Use Planning Matters and the interest in creating "Disaster Resilient Communities" Chris Bova may be attending that conference and report on any initiatives. Chemical Facility Security News reporting on amendments to HR 1947 to ensure integration of agriculture agency knowledge with chemical and environmental protection agencies to address hazards associated with the use of agricultural chemicals and their storage and use. Reported on the quarterly report and expenses of acquiring the contractor for the plan update. We are still waiting for the execution of the contract to be sent back to the solicitor and agreement of work. The Director has been on medical leave and will follow up with him on his return. StormReady status has been renewed which was included in previous plan and discussion on some of the updates including the Excelsa Health StormReady policies and procedures. Additionally the school district initiatives for NOAA weather radios and other activities that the county does for storm related awareness.*

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### **Hazard (previously flood) Mapping:**

*Anthony stated that he has a proposal that is being voted by the Commissioners on mapping products and described the tool and it's portabilities and ability to have multiple layers to be available to multiple departments with it being available on the "cloud". More information will be forthcoming if approved.*

### **Best Practices in Mitigation:**

*Discussion on interest by local emergency coordinators to become active in hazard mitigation. An orientation package is available that includes articles on mitigation and measures that includes templates and how to get started in mitigation in the local community. Discussion on whether the 9 regional task forces should look at hazard mitigation collectively, and more specifically to have Region 13 to look at an initiative to collaborate on mitigations.*

### **Hazards & Mitigations:**

*Wildcat sewers and the public health concerns.*

*Household hazardous waste*

*Quebec Train Disaster, discussion on what the evacuation zones are considered in these types of hazards?*

### **Next Meeting & Location:**

*August 14, 2013 0900*



## HAZARD MITIGATION PLAN UPDATE WESTMORELAND COUNTY, PENNSYLVANIA

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### Meeting Agenda Westmoreland County Public Safety Building Wednesday, August 13, 2013 at 10:30am

- Project Scope of Work and Schedule
- Municipal Planning Partnership
  - How to Advertise and Promote Involvement
  - Letter of Intent to Participate
  - Kick Off Meeting for Municipal Planning Partnership
- Working Group
  - Composition
  - Involvement of Stakeholders
- Data Collection
  - County Level Data and GIS
  - Relevant Existing Studies and Reports
  - Review of Municipal Data/Information Collection Worksheets
- Public Outreach (website, surveys, meetings, etc.)
  - Review example Southampton project site ([www.southamptonhmp.com](http://www.southamptonhmp.com))
  - Citizen Preparedness and Mitigation Survey (via Survey Monkey)
  - Public Meetings
- Stakeholder Outreach and Involvement
- Progress Reporting and Tracking “In-Kind” Services
- Project Cost Itemization and Payment Timeline (per PEMA Grant Agreement)



# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**August 14, 2013**

*1030-1220 hours*

### **Introductions:**

*Tetra Tech Representatives and all members provided self introductions.*

*Jonathan Raser - Hazard Mitigation Manager; Caitlin Kelly – Planner; Clyde Snyder – Planner; Jim Laffey – Planner*

### **Review:**

*Kick off meeting for HMWG conducted by Jonathan Raser, agenda & documents provided, including: Capability Assessment Survey, Lehigh Valley Survey sample, Letter of intent to participate sample, municipality POC sample, Contact sheet sample, Mitigation Project Capture Sheet, Privacy Act Request for FEMA NFIP Data sample, Evaluation of Identified Hazards and Risks,*

### **Hazard (previously flood) Mapping:**

*New version of mapping software-Pologruto, provided handout on items that will be available, and Anthony provided a summary of products to be available.*

### **Best Practices in Mitigation:**

*PEMA Hazard Mitigation Assistance Circular (C2013-06) provided handout  
FMA & PDM*

*Letters of Interest from DR 4025-4030-Sutersville, Ligonier Township, Ligonier Borough,  
Vandergrift*

### **Hazards & Mitigations:**

*Hazard Mitigation Assistance Environmental Benefits Policy and Calculator provided  
handout*

*Fiscal Year 2013 Hazard Mitigation Assistance Guidance*

### **Next Meeting & Location:**

*September 11, 2013 0900 Westmoreland County Emergency Operations Center (A  
training class may be held for 911 and may require rescheduling time and location)*



# MEETING NOTES

<b>Date</b>	Wednesday, August 14, 2013	<b>Time</b>	1030 hours – 1215 hours
<b>Subject</b>	Westmoreland County HMP Update Kick-off Meeting		
<b>Attendees</b>	In attendance were Jack Astion, MAWC; Chris Bova, WC Planning; Darlene Bracken, PEMA; Michael Brooker, WCDPS; Ron Cramer, New Alexandria LEMC; Jeff Downs, West Penn Power; Brian Jones, WCDPS; Ellen Keefe, WC Cleanways; Dave Knox, Upper Burrel LEMC; Ted Kopas, WC; Richard Matason, NHT; Jim Pillsbury, NRCS; Anthony Pologruto, WCDPS GIS; Sandy Smythe; WCDPS; Daniel Stevens, WCDPS; Christopher Tantlinger, WCDPS; Caitlin Kelly, Tetra Tech; Jim Laffey, Tetra Tech; Jonathon Raser, Tetra Tech; and Clyde Snyder, Tetra Tech.		

## DISCUSSION POINTS: GROUP 1030 HRS. – 1215 HRS.

- **Planning Updates Release of Westmoreland HMP**
  - Starting in January 2013 the Working Group began to reconvene to develop and disseminate a RFP for a contractor to update the Westmoreland HMP.
  - Other HMP projects have also come to Westmoreland’s attention since 2006:
    - Generators are now allowed under the 5% quota for HMGP and PDM grants
  - Working group continually collected data over the past years regarding hazards that occur within the County and fall in-line with PEMA’s plan and guidance. This information has also been discussed during local EMA meetings to receive municipal input.
  - Moving forward with the 2014 update, the current Working Group will be the steering committee, which will contain a number of members from public safety, including GIS, planning and utility agencies, such as water, power and possibly gas. Public works is not an active member of the Working Group due to limited staffing.
    - Current Working Groups members are open to recruiting other agencies, if needed.
  - For past plans the Working Group has had success getting answers to questions, but attaining and compiling data has been difficult.
  - Working Group has been meeting monthly over the past 6 months and will continue to do so.
- **RFP Plan Approach and Schedule**
  - Tetra Tech would like to expedite the proposed planning process and have a draft plan submitted in spring 2014. This would shorten the original timeframe of November 2014 for plan completion.
  - Working Group is to consider the shorten project timeframe.
- **Municipal Involvement**
  - Formal invitations –during the last HMP planning process municipalities received three direct contacts from the Working Group. Even though outreach was conducted, only 50% of the municipalities participated in the HMP initially. This is most likely a result of the lack of staffing in municipalities.
  - In the past two years the Working Group has provided hazard mitigation orientation packets to the municipalities, which includes information on the NFIP, a template plan to make relative to their community and a community survey to ascertain information regarding the municipality’s hazard vulnerabilities and capabilities.
  - It would be beneficial to send the municipalities a formal invitation to participate in the 2014 update planning process, but the invitation should be simple.
    - Example documents provided by Tetra Tech should be familiar to the municipalities; Working Group will review and provide suggestions to tailor documents, if needed.
      - Invitations should be disseminated from the County Commissioner’s office and not by Tetra Tech.





# MEETING NOTES

- During future local EMA meetings, a Working Group representative or Tetra Tech employ could go over a synopsis of the HMP planning process. The next meeting is September 18 from 7:00 – 8:00pm.
- The first large group meeting with the municipalities should be held within 10 days of the September 18<sup>th</sup> meeting.
- A tracker should be placed on the HMP website to depict each municipality's participation in the HMP planning process – Working Group will consider.
  - GIS has the capability to provide color-coded images to achieve suggestion.
- Information and participation should also be sought from private utilities. They are eligible to receive grant funding for mitigation projects if they participate in the HMP planning process and provide mitigation projects.
  - In the last HMP various entities such as private utilities, agencies and schools were not contacted to participate.
  - Tetra Tech will develop a spreadsheet and start to populate critical facilities and services (e.g. fire departments, police departments, schools, etc.)
- **Public Outreach**
  - Public outreach meetings are adjustable depending on participation, 5 public meetings are not necessary if no one attends.
  - Limiting the meetings is beneficial. During the Marcellus Shale public meetings, the Planning Commission conducted meeting in each corner of the County, but the HMP meeting do not need to go to that extent. Working Group should consider having two meetings in one day (afternoon/evening) at one location. Meetings locations should be considered in the east and west, if a central location is decided the meeting site should be away from the court house, perhaps the conservation site.
  - Information regarding the 2014 HMP and its process should be widely available to the public. A website will be developed to include maps and hazard information.
    - Tetra Tech will develop the website with assistance from the Westmoreland GIS Division Head. Westmoreland will have a link from their county website to the HMP specific website.
  - Presenters need to be aware that public meetings can turn into long sessions where the community complains. Meetings should be kept short and should be part of a larger meeting (e.g. Township Board meetings, etc.)
  - Tetra Tech will provide a template for media releases to Westmoreland PIO
  - For past public outreach campaigns, the Planning Commission has worked with the media to develop articles, which linked the plan or project's website to provide more information to the public.
    - Tetra Tech will work with the Planning Commission to develop Public Outreach strategy.
- **Hazards of Concern**
  - Working Group will review the previously identified hazards of concern and decided on whether the hazards should stay or be removed from the plan. The Working Group will also consider adding hazards that were not previously identified.
  - Event loss and critical facility information will be provided from Chris to Tetra Tech.
- **Volunteer Availability**
  - The possibility of utilizing interns from various nearby schools should be considered and looked into.
- **Cross Walk**
  - The Working Group is looking for a more organized plan that follows PEMA and FEMA guidance for the 2014 update.
  - Chris will provide Tetra Tech with the past plan's crosswalk and a full version of the 2006 HMP.
  - Tetra Tech will develop and draft the required PEMA quarterly reports for Westmoreland County moving forward.





# MEETING NOTES

## NEXT STEPS

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- The Working Group will review Tetra Tech provided documents and provide the necessary feedback
- The Working Group will review the identified hazards of concern from the 2006 plan and provide feedback
- Working Group will consider revised project timeframe
- Chris will provide a copy of the full 2006 HMP and crosswalk
- Tetra Tech will provide updated project schedule
- Tetra Tech will provide requested documents.



# AGENDA

## HAZARD MITIGATION WORKING GROUP

**September 11, 2013**

### **Introductions:**

### **Review:**

Kickoff/municipal meeting date/location

RL/SLR received/PEMA

Informational Documents/Tetrattech

- Contact and Municipal Information Sheet
- Evaluation of Identified Hazards and Risks
- Westmoreland Project Capture Worksheet
- Cover Sheet LOI
- Intent to Participate

Actions Matrix/HMP

NFIP Community Status Book

OPSEC Process/Pologruto

HVA Assessment review/Pologruto

CI reports provided 285p Special Needs, Preplanned, SARA, Em. Services, Infrastructure

### **Hazard (*previously flood*) Mapping:**

Status report on GIS Layers Hazard Mapping Data

HAZUS Training

### **Best Practices in Mitigation:**

Overland flooding awareness

Safe Building Codes Incentives Act

### **Hazards & Mitigations:**

Landslide/ pipeline rupture awareness

Generators to be provided from 4025-4030

Know Your Floodline Initiative

**Keep Westmoreland County Beautiful**, Westmoreland Cleanways' program arm of Keep America Beautiful, was awarded three grants totaling \$16,000

- \$1,000 Cigarette Litter Prevention Program
- \$5,000 2013 UPS/KAB Tree Planting Grant awarded to the **City of Latrobe**
- \$10,000 KAB/Waste Management Think Green Grant to implement apartment recycling programs in the **City of Jeannette** and the **City of Greensburg**.

### **Next Meeting & Location:**

October 9, 2013



8/14/2013 updated

## Hazard Mitigation Working Group Monthly Meeting



Last Name	First Name	Title	Representing	E-Mail	Signature
Ashton	Jack	Asst. Manager	MAWC	<a href="mailto:jashton@mawc.org">jashton@mawc.org</a>	
Bova	Chris	Deputy Dir.	WC Planning	<a href="mailto:cbova@co.westmoreland.pa.us">cbova@co.westmoreland.pa.us</a>	
Bracken	Darlene	EM Specialist	PEMA	<a href="mailto:dbracken@pa.gov">dbracken@pa.gov</a>	SIGN HERE
Brooker	Michael	Director	WCDPS	<a href="mailto:mbrooker@co.westmoreland.pa.us">mbrooker@co.westmoreland.pa.us</a>	
Cramer	Ron	LEMC	New Alexandria	<a href="mailto:navfd@hotmail.com">navfd@hotmail.com</a>	SIGN HERE
Downs	Jeff	Representative	West Penn Power	<a href="mailto:jdowns@firstenergycorp.com">jdowns@firstenergycorp.com</a>	SIGN HERE
Jones	Brian	Deputy Dir.	WCDPS	<a href="mailto:bjones@co.westmoreland.pa.us">bjones@co.westmoreland.pa.us</a>	SIGN HERE
Keefe	Ellen	Member	WC Cleanways	<a href="mailto:ekeefe@westmorelandcleanways.org">ekeefe@westmorelandcleanways.org</a>	SIGN HERE
Kelly	Caitlin	Planner	TetraTech	<a href="mailto:caitlin.kelly@tetrattech.com">caitlin.kelly@tetrattech.com</a>	SIGN HERE
Knox	Dave	LEMC	Upper Burrell	<a href="mailto:knoxda@gmail.com">knoxda@gmail.com</a>	
Kopas	Ted	Commissioner	WC	<a href="mailto:fkopas@co.westmoreland.pa.us">fkopas@co.westmoreland.pa.us</a>	SIGN HERE
Laffey	Jim	Planner	TetraTech	<a href="mailto:jim.laffey@tetrattech.com">jim.laffey@tetrattech.com</a>	ON CONFERENCE CALL
Matason	Richard	Member	NHT	<a href="mailto:richm1709@comcast.net">richm1709@comcast.net</a>	SIGN HERE
Pillsbury	Jim	Member	NRCS	<a href="mailto:jim@wcdpa.com">jim@wcdpa.com</a>	SIGN HERE
Pologruto	Anthony	GIS Coordinator	WCDPS GIS	<a href="mailto:apologru@co.westmoreland.pa.us">apologru@co.westmoreland.pa.us</a>	
Raser	Jonathon	HMManager	TetraTech	<a href="mailto:jonathan.raser@tetrattech.com">jonathan.raser@tetrattech.com</a>	ON CONFERENCE CALL
Smythe	Sandy	Finance	WCDPS	<a href="mailto:ssmythe@co.westmoreland.pa.us">ssmythe@co.westmoreland.pa.us</a>	
Snyder	Clyde	Planner	TetraTech	<a href="mailto:clyde.snyder@tetrattech.com">clyde.snyder@tetrattech.com</a>	
Stevens	Daniel	PIO	WCDPS	<a href="mailto:dstevens@co.westmoreland.pa.us">dstevens@co.westmoreland.pa.us</a>	SIGN HERE
Tantlinger	Christopher	HMO	WCDPS	<a href="mailto:ctantlin@co.westmoreland.pa.us">ctantlin@co.westmoreland.pa.us</a>	





# MEETING NOTES

<b>Date</b>	Wednesday, September 11, 2013	<b>Time</b>	9:00 A.M. – 11:00 A.M.
<b>Subject</b>	Westmoreland County Hazard Mitigation Plan (HMP) September Meeting		
<b>Attendees</b>	Jack Ashton, MAWC Chris Bova, WC Planning Michael Brooker, WCDPS Dave Knox, Upper Burrel LEMC Anthony Pologruto, WCDPS GIS Sandy Smythe; WCDPS Christopher Tantlinger, WCDPS Jim Laffey, Tetra Tech Jonathon Raser, Tetra Tech Clyde Snyder, Tetra Tech		

## DISCUSSION POINTS: 9:00 A.M. – 11:00 A.M.

### Working Group (WG) Updates

- Westmoreland County has received the most current Repetitive Loss/Severe Repetitive Loss (RL/SRL) data from the Pennsylvania Emergency Management Agency (PEMA). According to the corrected data<sup>1</sup>, one SRL property and 8 RL properties are in Westmoreland County. PEMA also provided the property address and homeowner’s contact information.
- Tetra Tech would like to involve the RL/SRL property owners in the HMP planning process.
- One of the RL properties is a large business; targeting and involving this property would be a good public relations opportunity.
- Christopher Tantlinger will provide Tetra Tech with the recently received NFIP data.

### HMP Documents for Review

- **Community Survey** – Tetra Tech has incorporated the WG’s comments and feedback into the community survey.
  - The survey will be an all-hazards survey and will request data from residents regarding both natural and non-natural hazards impacting the county.
  - The survey will be presented at the LEMC meeting September 18, 2013.
- **Public Website** is currently under construction, and should take another week or two to complete. Before going live, Tetra Tech will work with Anthony Pologruto on GIS data and maps that Westmoreland would like to incorporate into the website (such as a participation map)
  - Anthony will build a map template to present to WG; colors of map can be changed at any point.
- **Contact and Municipal Information Sheet** – In the past, Westmoreland County has distributed the contact sheet and received numerous responses. However, with such a time lapse, the County will redistribute and ask all municipalities to complete, even if they have provided the information in the past.
  - Tetra Tech will provide same forms at the stakeholder kick-off meeting, and will further send the forms electronically to municipalities (given they provide their contact information).
  - Tetra Tech will also disseminate the following work sheets at the stakeholder kick-off meeting: Evaluation of Identified Hazards and Risk; Project Capture Worksheet; Risk Assessment Worksheet; and Events and Losses Worksheet. All worksheets will be distributed to the WG for review prior to the stakeholder kick-off meeting.
    - The Project Capture Worksheet will replace the County’s former HMPO. If stakeholders have a question on the Project Capture Worksheet, they should refer to the HMPO.

<sup>1</sup> The RL/SRL list distributed by PEMA has indicated that Westmoreland County has 9 Repetitive Loss properties located within the County. However, one property listed does not reside within the County; correction has been sent to PEMA.





# MEETING NOTES

- **Letters of Intent to Participate (LOI)** – Westmoreland County’s Director requests that two separate letters go to the municipalities regarding the LOI to participate. One letter will be addressed to the municipalities that participated and adopted the 2009 HMP, the second letter will be addressed to the municipalities who have not participated in past planning efforts.
- Westmoreland County and Tetra Tech will work to develop one letter that incorporates all the relevant information for both parties stated above. The letter will need to be approved by the WG and the Westmoreland County Director.
- Before the letter is disseminated, both the survey and the website will be established and “live.”
  - Tetra Tech will provide Westmoreland County with an updated status on the website and survey.
- **Locations for Meeting Venues**
  - Still looking into venues for future meetings. The Community College’s community room and/or the Intermediate Unit’s amphitheater are promising. Westmoreland County will finalize the venue once meeting dates are established.
- **Tetra Tech Requests**
  - Actions Matrix – some action items identified in the matrix are identified in the original plan, and others have been developed after the adoption of the plan. The matrix is a good reference to use when speaking with municipalities regarding status updates on mitigation projects.
    - The Actions Matrix and Annex M of the HMP are not the same, due to updated and additional actions incorporated.
    - Westmoreland County would like to stress that even if a mitigation action was denied after prior disaster declarations, municipalities should still continue to pursue the implementation of that action with County support
  - Critical Infrastructure Sites - Tetra Tech is still reviewing the data set of critical infrastructure sites. Tetra Tech would like, if possible, to receive this data in a GIS format.
    - Anthony Pologruto will work on this request by creating certain maps.
    - Maps will be reference in the plan and on the website so that the public can view.
    - Tetra Tech will send Anthony information on Flex Viewer.
- **NFIP Status Book**
  - The NFIP Status Book is a tool that allows the public to go on-line and view the status of their municipality within the NFIP. Search functions within the tool are limited. The public can view their state but need to search alphabetically for their municipality. Westmoreland County would like to see this data broken down at a county level.
  - Tetra Tech will develop and provide the WG with a matrix highlighting Westmoreland County’s municipal information regarding the NFIP. This information will include the position of the NFIP administrator, where possible.
    - Anthony Pologruto will develop a map from the data Tetra Tech provides
- **Hazard Vulnerability Matrix**
  - Tetra Tech will utilize PEMA’s Identified Hazards of Concern (HOC) Matrix Worksheet and the Hazard Risk Ranking Exercise to gather data from the municipalities. Tetra Tech will then work with the WG on a county level to identify the HOC for each municipality. Tetra Tech will present their findings to each municipality and work with them to address any issues.
- **Hazards of Concern**
  - The WG has identified the following Hazards of Concern:
    - Natural Hazards
      - Flooding
      - Windstorms (Tornadoes)





# MEETING NOTES

- Hurricane, Tropical Storm
- Winter Storm (Heavy Snow, Blizzard, Ice Storms)
- Earthquake (Seismic Activity)
- Landslide
- Land Subsidence
- Drought
- Wildfire
- Extreme Temperatures
- Radon Exposure
- Lightning<sup>2</sup>
- Hailstorm<sup>3</sup>
- Non-Natural Hazards
  - Dam Failure
  - Transportation Accident (all accidents involving hazardous materials will be referred to in its eponymous profile)
  - Nuclear Accident (will include fixed facility and waste removal operations)
  - Hazardous Materials (will include fixed facility and in-transit – vehicle, pipeline, etc.)
  - Major Structural Fires
  - Utility Failure (will include electric, water and natural gas failures)
  - Terrorism (will involve CBRNE, Denial of Service/Cyber Attacks, Bombs/Explosions, etc.)
- Tetra Tech has started to develop profiles for some of the natural HOCs frequently experienced in Westmoreland County. Tetra Tech requests information from the County's Knowledge Center and/or WebEOC logs for information on non-natural hazards that have occurred in Westmoreland County.
- Westmoreland, if able, will provide basic information on past non-natural hazards that have impacted the County.
- Best Practices of Mitigation
  - Overland flooding needs to be detailed in the updated plan, as this can be a major concern in the County.
  - Safe Building Code Incentive Act
    - States can become eligible to receive federal funds if they participant in this NFIP initiative.
    - The Incentive Act and the building codes should be noted in the Capability Assessment.
    - The thought that hazards can create new or exacerbate existing hazards should be detailed in the plan.
  - PEMA Flood Line Initiative
    - A public awareness initiative requesting communities to mark flood lines in locations where floods have been issues in the past.
  - Westmoreland Cleanways
    - Numerous mitigation projects are ongoing, including cigarette litter prevention program, tree planting, and a waste management/recycling program

## NEXT STEPS

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- Emergency Managers Meeting – September 18, 2013: Tetra Tech will present information promoting interest in the 2014 HMP Update.

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<sup>2</sup> Added per Tetra Tech's conversation with Chris Tantlinger on September 13, 2013.

<sup>3</sup> Please see above note.





# MEETING NOTES

- Tetra Tech will provide the following information to the WG: status of website and survey; worksheets to be distributed at the stakeholder kick-off meeting; information on FlexViewer; NFIP municipality matrix.
- WG will review worksheets to be distributed at stakeholder kick-off meeting.
- Westmoreland County will provide NFIP data and requested maps.





# Hazard Mitigation Plan 2014 Update



Presented by Tetra Tech EM Inc.



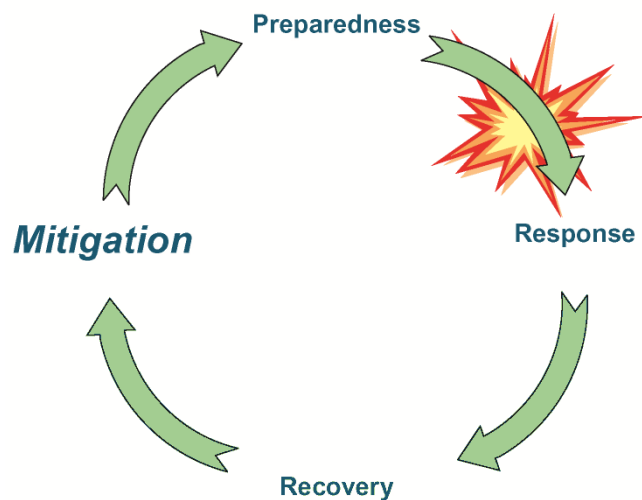
## What is Hazard Mitigation?

*“Mitigation” -*

*Sustained action taken to  
reduce or eliminate  
long-term risk to life and property  
from a hazard event*

*-Or -*

*Any action taken to  
reduce future disaster losses*





## Westmoreland County HMP – 2014 Update



### Why are we Preparing these Plans?

- To reduce our losses from natural and non-natural hazards
- To make our communities more “disaster resistant”
- To maintain our eligibility for federal mitigation grant funding
  - Hazard Mitigation Grant Program (HMGP)
  - Hazard Mitigation Assistance (HMA) Grant Program
    - Pre-Disaster Mitigation (PDM) Program
    - Flood Mitigation Assistance (FMA) Program
    - Repetitive Flood Claims (RFC) Program
    - Severe Repetitive Loss (SRL) Program

**A Local Mitigation Plan demonstrates a jurisdiction’s commitment to reducing risks from natural hazards and serves as a guide for decision makers as they commit resources to minimize the effects of natural hazards.**



## Westmoreland County HMP – 2014 Update



### What does the All-Hazards Plan provide?

- A comprehensive, factual assessment of risk to support a comprehensive strategy to manage natural hazard risk
- A detailed action plan the county and communities will implement to reduce risk to natural and non-natural hazards

**“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).**

- Coordination of mitigation efforts with other local, county, regional, state and federal entities
- Access to Federal mitigation grant funding





## Westmoreland County HMP – 2014 Update



### Show Me the Money!

- Grant funding typically covers 75% of project costs
- Eligible mitigation projects may already be identified in your capital improvement plans and budgets
- Eligible projects often support other regulatory programs, such as Phase II Stormwater (MS4) requirements
- Projects often provide longterm reductions in municipal services costs
  - Emergency Response and Protective Services
  - Maintenance and repair of infrastructure
- Can fund post-disaster mitigation of damaged structures and infrastructure (404 and 406 funding)



## Westmoreland County HMP – 2014 Update



### What kinds of Funding and Grants are Available?

#### The Hazard Mitigation Grant Program (HMGP)

is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration.



#### The Flood Mitigation Assistance (FMA)

program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP).



#### The Repetitive Flood Claims (RFC)

program is authorized by Section 1323 of the NFIA, 42 U.S.C. 4030, with the goal of reducing flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund (NFIF) in the shortest period of time.



#### The Pre-Disaster Mitigation (PDM)

program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments, and local communities in



implementing a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future disasters.

#### The Severe Repetitive Loss (SRL)

program is authorized by Section 1361A of the NFIA, 42 U.S.C. 4102a, with the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.





## Westmoreland County HMP – 2014 Update



### Who must have a “Plan” under Federal law?

- All “local governments”
  - States – Pennsylvania has a “Standard” Plan
  - Counties (for county assets)
  - Municipalities (cities, towns, villages)

### The Westmoreland County Plan and Update

- Westmoreland County and 53 of the 65 Municipalities developed and adopted the original HMP.
- The Final Plan was approved by FEMA in 2009.
- By regulation, local HMPs must be formally updated, approved by FEMA, and adopted by all jurisdictions every 5 years.

*Westmoreland County Department of Public Safety and the Department of Planning and Development are facilitating this planning process, with the support and direction of the Westmoreland County Hazard Mitigation Working Group and Tetra Tech, Inc.*



## Westmoreland County HMP – 2014 Update



### Why is Updating these Plans Important?

- These Plans are intended to guide and direct risk reduction activities – thus they need to stay relevant.
- Our Exposure and Vulnerability to natural hazard risk changes:
  - As nature (or man’s effects on nature) changes
  - As man does things to increase or decrease our vulnerability
  - As our capabilities to manage risk change (knowledge about risk, funding, etc.)
- How we propose to continue to manage natural hazard risk at the County, Local and Personal levels continually needs to be monitored, assessed and adjusted.
- The County and Local Mitigation Strategies (projects, initiatives, etc.) needs to address our risk as we now know it.



## Westmoreland County HMP – 2014 Update



### Municipal Planning Partnership

- All municipalities are encouraged to participate, and either continue or gain plan coverage eligibility for Federal mitigation grant funding.
- All municipalities who wish to join the update process must formally indicate their intent to participate via a Letter of Intent to Participate (LOI).
- Municipalities are required to actively participate:
  - Provide municipal representation at planning meetings/workshops
  - Provide data and information (via survey forms) in a timely manner
  - Support public and stakeholder outreach in your jurisdiction
  - Identify hazard risks and vulnerabilities in their community
  - Identify progress on projects/initiatives identified in the original plan
  - Identify new projects/initiatives to address their risks
  - Review and provide feedback on Draft and Final Plan documents
  - Adopt the updated plan once approved by FEMA
  - Implement and Maintain the Plan



## Westmoreland County HMP – 2014 Update



### Update of County and Local Mitigation Action Plans

- Identify progress made on mitigation actions identified in 2009 plan.
- If an action wasn't completed, why not? This strategy review process is NOT meant to blame or punish. The answer can reveal things that need to be addressed to allow mitigation to progress (new initiatives), for example:
  - Obstacle: We do not have the technical resources to prepare a grant application.
  - Possible Action: Develop a county-level support team trained in application development.
- Identify new mitigation actions and initiatives. If the project isn't in your plan, it is not (technically) eligible for federal grant funding!



## Westmoreland County HMP – 2014 Update



### Mitigation Actions? Like What?

- **Prevention.** Measures such as planning and zoning, open space preservation, land development regulations, building codes, storm water management.
- **Property Protection.** Measures such as acquisition, relocation, storm shutters, rebuilding, barriers, floodproofing, insurance, and structural retrofits for high winds.
- **Public Education and Awareness.** Measures such as outreach projects, real estate disclosure, hazard information centers, technical assistance.
- **Natural Resource Protection.** Measures such as erosion and sediment control, stream corridor protection, vegetative management, and wetlands preservation.
- **Emergency Services.** Measures such as hazard threat recognition, hazard warning systems, emergency response, protection of critical facilities, and health and safety maintenance.
- **Structural Projects.** Measures such as dams, levees, seawalls, bulkheads, retaining walls, channel modifications, storm sewers, and retrofitted buildings and elevated roadways.



## Westmoreland County HMP – 2014 Update



### Integration with Other Plans and Programs

The Hazard Mitigation Plan should complement and support other Plans and Regulatory Mechanisms

- Comprehensive Emergency Management Plans (CEMP)
- Comprehensive / Master Plans (regional and local) – these plans guide and direct land use and development
- Stormwater Management Plans (flood problem areas and potential solutions identified)
- Capital Improvement Plans (some of these projects are grant eligible)
- Higher Regulatory Standards (e.g. increased free-board, cumulative substantial damages)



## Westmoreland County HMP – 2014 Update



### Plan Implementation

- Your mitigation strategy section provides a “blueprint” to follow for progressively reducing your community’s natural hazard risk.
- It will includes two type of initiatives/projects – those that your community can “self fund”, and those that will require outside (e.g. grant) funding.
- Mitigation grant opportunities open regularly:
  - The annual HMA grant window opens in June of each year.
  - HMGP funding comes in the wake of Declared Disasters in the State.
- County Hazard Mitigation Coordinators will continue to alert planning partners of grant opportunities as they arise, including all guidance and instructions provided by PEMA and FEMA.



## Westmoreland County HMP – 2014 Update



### Why do I want to do this again? ...show me the money

- Grant applications across all mitigation programs are similar (almost identical) and can be submitted through e-Grants to more than one program, and re-submitted if not awarded the first time.
- The grant process starts with a simple “Letter Of Intent” (LOI). PEMA will review the LOI and advise the community whether they should move forward with their application.
- Projects often address private property (e.g. residential, commercial), however the town or county must apply on their behalf as the “sub-applicant”.
- Grants typically require a 25% local match...for private property projects, the property owner is typically responsible for providing the local match.





## Westmoreland County HMP – 2014 Update



Here's how it works...

Example: Consider a \$200,000 storm water improvement project in your 5-year Capital Budget for FY13

	<u>No Grant</u>	<u>With Grant</u>
Base Project Cost:	\$ 200,000	
Project cost with grant support:		\$ 220,000
Less 75% FEMA reimbursement:		<u>(\$ 165,000)</u>
Net Project cost to Town:	\$ 200,000	\$ 55,000
Savings:		\$ 145,000 (73%)

...and this doesn't consider long term cost benefits



## Westmoreland County HMP – 2014 Update



### **Tetra Tech Project Contacts:**

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Or post to the SharePoint site!!!





# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**October 9, 2013**

### **Introductions:**

#### **Review:**

Website/Survey  
Letter of Intent-Municipal Distribution  
Stakeholder & Kick off location/s, time/s  
Schedule Review  
Tetra Tech Inc. presentation to LEMC's  
Tony Subbio

### **Hazard (*previously flood*) Mapping:**

Collaboration and presentation features  
GIS Data sheets

### **Best Practices in Mitigation:**

HAZUS

### **Hazards & Mitigations:**

Generators to be provided from 4025-4030

### **Next Meeting & Location:**

November 13, 2013

8/14/2013 updated

Hazard Mitigation Working Group  
Monthly Meeting



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8/14/2013 updated

Hazard Mitigation Working Group  
Monthly Meeting



Last Name	First Name	Title	Representing	E-Mail	Signature
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# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

**October 9, 2013**

**Introductions:** *Excused:* Knox, Jones, Ashton; *Teleconference:* Bova, Kelly, Laffey, Subbio; *Present:* Bracken, Brooker, Kopas, Pologruto, Snyder, Stevens, Tantlinger

### **Review:**

Website/Survey-reviewed and to be forwarded to County portal.

Letter of Intent-Municipal Distribution-Letter is ready for distribution, consider using associations and other groups to send message to stakeholders and LEO.

Stakeholder & Kick off location/s, time/s – November 13, 2013 at 0900 and 1900, venue to be confirmed.

Schedule Review. Caitlin related that we are on track and that review should be ready for June. The next two quarters will be the heavy information gathering..

Tetra Tech Inc. presentation to LEMC's. Good interest was exhibited by the local coordinators and information on the grants available was classified in a powerpoint.

Tony Subbio-introduction and background provided, as he will be the new admin project manager.

### **Hazard (previously flood) Mapping:**

Collaboration and presentation features-Pictometry is pending approval and GIS is ready to start delivering information based on the critical infrastructure information forwarded from public safety to GIS department.

GIS Data sheets-Information is being gathered but validation of LAT LON and physical address is making it slow to gather information. Good info from MAWC and Red Cross.

### **Best Practices in Mitigation:**

HAZUS-Description on features known by TetraTech and the Census level data and use to determine economic and population impact, as it is required by FEMA. Discussion on importing data to improve overall representation of major critical areas.

### **Hazards & Mitigations:**

Generators to be provided from 4025-4030-Discussion on the PEMA granting of disaster mitigation funds to provide generators to the counties direct rather than local projects as requested in letters of intent.

### **Next Meeting & Location:**

November 13, 2013 Location to be determined and will include stakeholder and LEO kickoff. It is possible that there maybe two meetings, @0900 and 1900hrs.

# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**December 11, 2013**

**Introductions:**

**Conference Call participants:**

**Review:**

Current participation - summary

Status update from Tetra Tech Inc.

- Capability Assessment
- Risk Assessment Workshop
- New and Current Hazard Review
- Vulnerability Assessment
- Public Risk Assessment meeting
- Quarterly report – Payment
- Project opportunities
- Follow up on non-participants
- Action Items

**Hazard Mapping:**

GIS Layers

**Best Practices in Mitigation:**

Project – East Vandergrift landslide

**Hazards & Mitigations:**

Generators / 4025-4030 / declaration update

**Next Meeting & Location:**

January 8, 2014



10/09/2013 updated

Hazard Mitigation Working Group  
Monthly Meeting



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10/09/2013 updated

# Hazard Mitigation Working Group Monthly Meeting



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# AGENDA

## HAZARD MITIGATION WORKING GROUP

**December 11, 2013** 0900-1000

**Introductions:** Bova, Cramer, Laffey, Pologruto, Stevens, Tantlinger

**Conference Call participants:** C Kelly

### **Review:**

Current participation – summary *We are currently in Step 2 of the Project. Reviewed numbers of forms returned by municipalities (few responses have come into Tetra Tech). Tetra Tech said they will reach out as well to municipalities, Chris Bova stated that participation is limited due to small staffs and electronic communication (lack of internet). Caitlin stated that if we can still get participation until mid April from the muni's in any of the forms, project, evaluation of identified risks and hazards and contact forms. Grant Facts sheet will be mailed along with a second request to muni's.*

Status update from Tetra Tech Inc.

- Capability Assessment *Ongoing only 2 rec'd to Tetra Tech Office*
- Risk Assessment Workshop *Plan for Early Feb*
- New and Current Hazard Review *20 hazards currently identified*
- Vulnerability Assessment *Anthony will work with Caitlin on trying to get data to Tetra Tech.*
- Public Risk Assessment meeting *Stake holder meeting should be set for Mid February*
- Quarterly report – Payment *Caitlin said that all should be up to date, handled by Tony Subbio.*
- Project opportunities *Form is online and 9 have been received, I asked for visibility on these as they are provided.*
- Follow up on non-participants *I asked that a letter from Tetra Tech be sent and that I will forward municipal folders on information that I have to Caitlin.*
- Action Items
  - *Define date for Mid February meeting*
  - *Forward projects and other forms as received*
  - *Data forwarded by Anthony to Tetra Tech*
  - *Provide municipal folders to Caitlin*
  - *Number of non-participants to Caitlin*

## **Hazard Mapping:**

GIS Layers *Maplayers* created by Anthony on ArcGIS site of spreadsheet provided and available on site for sharing. Demonstration by Anthony. Reviewed Shelters, wastewater treatment plants.

## **Best Practices in Mitigation:**

Project – East Vandergrift landslide *Discussed project LOI sent to PEMA/FEMA for latest presidential declaration.*

## **Hazards & Mitigations:**

Generators / 4025-4030 / declaration update *Discussed County road garage being able to provide the matching funds for the grant provided. No information confirmed at this time.*

## **Next Meeting & Location:**

January 8, 2014 **PLEASE NOTE, THAT DUE TO CONSTRUCTION BEING CONDUCTED AT 911, MEETING LOCATION MAY HAVE TO BE CHANGED FOR THE JANUARY MEETING.**

# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**January 8, 2014**

**Introductions:**

**Conference Call participants:**

**Review:**

Status update from Tetra Tech Inc.

- Capability Assessment
- Risk Assessment Workshop
- New and Current Hazard Review
- Vulnerability Assessment
- Public Risk Assessment meeting
- Quarterly report – Payment
- Project opportunities
- Follow up on non-participants
- Action Items

**Hazard Mapping:**

GIS Layers

**Best Practices in Mitigation:**

Radon

**Hazards & Mitigations:**

Generators / 4025-4030 / declaration update

**Next Meeting & Location:**

February 12, 2014

# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

**January 8, 2014** 0900-1000

**Introductions:** Bova, Laffey, Pologruto, Tantlinger; Excused: Bracken, Jones, Snyder, Subbio

**Conference Call participants:** Kelly, Knox

### **Review:**

Status update from Tetra Tech Inc.: *Caitlin provided update that hazard profiles are complete with the exception of transportation. Looking at mid February for Risk Assessment Workshop. Working on hazard rankings. She stated that she would like to use SharePoint site to review the information and drafts. End of February for public meeting would be appropriate. Dates were tentatively set for the evening of Feb 26<sup>th</sup> and daytime of Feb 27<sup>th</sup>. There has been little or no information from municipalities since and before the holiday. Continued efforts to notify the municipalities by both TetraTech and public safety will continue. 420 persons have completed the survey to date, however there have not been any additional projects submitted. Facebook post seemed to provide the best uptick for additional surveys being completed was noted by Caitlin.*

- Capability Assessment – *Looking at March to finalize*
- Risk Assessment Workshop – *February*
- New and Current Hazard Review - *February*
- Vulnerability Assessment – *Anthony has provided all information and other information on topo was found online.*
- Public Risk Assessment meeting – *End of February*
- Quarterly report – *Payment Report submitted, waiting on Sandy to determine status of payment.*
- Project opportunities - *No additional projects have been submitted to date from the previous 9.*
- Follow up on non-participants – *Continued action by Tetra Tech & WCDPS*
- Action Items –
  - *Set date and location for next public meeting, Caitlin to send details of meeting tasks.*
  - *Municipal participation enhanced by email, phone call, and face to face contact.*
  - *Distribution list sent to Caitlin of Municipal contacts.*
  - *Files of Original HMP placed on SharePoint*
  - *Follow up on payment not received*
  - *Transportation profile*
  - *Forward emails related to SharePoint access difficulties*

## **Hazard Mapping:**

GIS Layers - Anthony has been compiling from spreadsheet provided but a mistake of listing Delmont twice will require an hour to correct and provide an update once ocompleted. Pictometry has begun and first flight to take place shortly, he stated that he is trying to secure 25 places for Public Safety. He will not be able to attend the HAZUS training in Emmitsburg MD due to it not being budgeted (\$458.40).

## **Best Practices in Mitigation:**

Radon- EPA notice provided to TetraTech for inclusion in hazard information.

**NOTE:** Tantlinger left meeting for emergency, information and meeting was completed by Chris Bova.

## **Hazards & Mitigations:**

Generators / 4025-4030 / declaration update- no report

## **Next Meeting & Location:**

February 12, 2014



# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**February 12, 2014**

**Introductions:**

**Conference Call participants:**

Link: Meeting access number: 866-692-5721

Participant code: 7237813

**Review:**

Status update from Tetra Tech Inc.

- Hazard Profiles
- Risk Factor Values
- Participation update
- Upcoming workshop meetings Feb 26<sup>th</sup> & 27<sup>th</sup>.

**Hazard Mapping:**

Profile mapping

**Best Practices in Mitigation:**

Safety Bulletin to Chemical Facilities

**Hazards & Mitigations:**

Project submissions, various municipalities.

**Next Meeting & Location:**

March 12, 2014

# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

### February 12, 2014

**Introductions:** Bova, Cramer, Pologruto, Snyder, Tantlinger, Excused: Pilsbury, Smythe, Stevens, Jones

**Conference Call participants:** Kelly, Knox

Link: **Meeting access number: 866-692-5721**

**Participant code: 7237813**

(This will be the access for all future meetings)

### Review:

Status update from Tetra Tech Inc. –*Caitlin stated that she feels that we are on schedule for FEMA-PEMA review and that we continue progressing forward. Sections 4.3 and 4.4 of the HMP update have been provided on the SharePoint site. Section 3 Planning assessment and capability assessment will be forthcoming.*

- Hazard Profiles- *Reviewed Flood profile 4.3 draft and went through outline and tables. Some minor corrections and concerns were illustrated and noted.*
- Risk Factor Values- *Reviewed RF formula and color coded table.*
- Participation update- *26 municipalities have not responded to date. Clyde will be reaching out to municipalities that have not participated on list generated by TetraTech. Discussion on level of participation required for FEMA-PEMA. LEMC have been notified of participation status at bimonthly meeting.*
- Upcoming workshop meetings Feb 26<sup>th</sup> & 27<sup>th</sup>. –*Venue and times have been confirmed by Sandy Smythe and will continue as planned.*
- *Bova stated that he has been informed that 500-1000 homes may be subject to the Biggart-Waters Act and flood insurance premiums may skyrocket and cause difficulties for homeowners under the flood mapped areas moving from subsidized to unsubsidized status.*
- *Community Rating System CRS program discussed and Caitlin offered to have someone from their office provide information on the program. John Mizerak (sp). May be able to describe implementation of the system and grant funding available, and it may also help reduce insurance premiums for those affected.*
- *Climate change directive as related to Hazard Mitigation has been directed by recent EPA planning initiatives and should be included in the HMP, Caitlin will provide information.*
- *Action Items-*
  - *Review Hazard Profiles*
  - *Anthony to email info on county base map to Caitlin.*
  - *Clyde making phone calls to municipalities.*

- *SharePoint access re-sent to members of Working Group along with notification of February 21<sup>st</sup> meeting to review profiles.*
- *Safety Bulletin information sent to Caitlin and placed on SharePoint. Categories to be listed in CIKR narrative.*
- *Caitlin confirm with Chicago on payment status.*
- *Advertisement of public meetings*
- *Press release of Hazard Profile review to be provided by Caitlin.*
- *Publicize Hazard Profiles (excluding dam failures) on website and County Home page.*

## **Hazard Mapping:**

*Profile mapping-Maps reviewed in profiles on SharePoint site and it was suggested by Anthony that roads be delineated on base map being used to illustrate throughout the plan to help public understand where they may be located.*

## **Best Practices in Mitigation:**

*Safety Bulletin to Chemical Facilities- Safety Bulletin 015 recently delivered to chemical facilities to provide mitigation ideas and awareness to prevent catastrophic releases at these critical infrastructure facilities.*

## **Hazards & Mitigations:**

*Project submissions, various municipalities. – There has been no change in the number of survey responses received. Some project submissions have been received and placed on SharePoint Municipal folders when received.*

**Notes:** *Dave Knox asked that he be notified of information regarding Lower Burrell, and may be able to help with some information distribution to some neighboring municipalities as well. He will email Caitlin.*

## **SharePoint:**

Contact Caitlin Kelly, [Caitlin.Kelly@tetrattech.com](mailto:Caitlin.Kelly@tetrattech.com)

## **Next Meeting(s) & Location(s):**

March 12, 2014 Emergency Operations Center (monthly meeting)

**NOTE:** A meeting has been scheduled for February 21, 2014 at 0900 to review profiles. Two Risk Assessment workshop public meetings have been scheduled at the Intermediate Unit on February 26<sup>th</sup>, 2014 at 1900, and February 27<sup>th</sup> at 0900.

# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

### *Special Meeting*

**February 21, 2014**

**Introductions:** Cramer, Pillsbury, Pologruto, Smythe, Snyder, Stevens, Tantlinger, Krivokucha, Excused-Bova

**Conference Call participants:** Kelly, Ashton, Knox

Link: **Meeting access number: 866-692-5721**

**Participant code: 7237813**

### **Review:**

- Hazard Profiles
  - Avalanche-Municipal information clarified
  - Drought-Mitigation strategies by MAWC, USGA losses information
  - Earthquake-Virginia Epicenter event
  - Extreme Temp-Graph months of year highlighted
  - Flood-Tom Hughes data for applying loss information/Previous meeting info
  - Hailstorm-Reconfigure Table
  - Hurricane-Precipitation data reconfigured
  - Landslide-Jim P, combine tables
  - Lightning-Death and injury Fairfield Twp not Ligonier
  - Radon-Comprehensive good
  - Subsidence/Sinkhole-Wholesale exchange for Mine subsidence using DEP info
  - Wildfires-DCNR to provide incident damage, injuries etc.
  - Tornado-Windstrom highlighted, hook echo info, changes in summary
  - Winter Storm-Labelle & Irvin, Stevens
  - Environmental Hazard-Ok
  - Structural Fires-Ok
  - Nuclear Incidents-Waltz Mill incident add
  - Transportation-Hazard Train cargo repeated from Environmental Hazard section
  - Utility Interruption-Ok

### **Next Meeting & Location:**

March 12, 2014 Emergency Operations Center (monthly meeting)

Two Risk Assessment workshop public meetings have been scheduled at the Intermediate Unit on February 26<sup>th</sup>, 2014 at 1900, and February 27<sup>th</sup> at 0900.

02/12/2014 updated

Hazard Mitigation Working Group  
Monthly Meeting



Last Name	First Name	Title	Representing	E-Mail	Signature
Ashton	Jack	Asst. Manager	MAWC	jashton@mawc.org	<i>Phone HERE</i> ✓
Bova	Chris	Deputy Dir.	WC Planning	cbova@co.westmoreland.pa.us	<i>Chris Bova</i>
Bracken	Darlene	EM Specialist	PEMA	dbracken@pa.gov	SIGN HERE
Cramer	Ron	LEMC	New Alexandria	navfd@hotmail.com	<i>Ron Cramer</i> ✓
Downs	Jeff	Representative	West Penn Power	jdowns@firstenergycorp.com	SIGN HERE
Jones	Brian	Deputy Dir.	WCDPS	bjones@co.westmoreland.pa.us	SIGN HERE
Keefe	Ellen	Member	WC Cleanways	ekeefe@westmorelandcleanways.org	SIGN HERE
Kelly	Caitlin	Planner	TetraTech	caitlin.kelly@tetrattech.com	<i>Donna Kelly</i> ✓
Knox	Dave	LEMC	Upper Burrell	knoxda@gmail.com	<i>Phone HERE</i> ✓
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Kopas	Ted	Commissioner	WC	fkopas@co.westmoreland.pa.us	SIGN HERE
Laffey	Jim	Planner	TetraTech	jim.laffey@tetrattech.com	SIGN HERE
Matason	Richard	Member	NHT	richm1709@comcast.net	SIGN HERE
Pillsbury	Jim	Member	NRCS	jim@wcdpa.com	<i>Jim Pillsbury</i> ✓
Pologruto	Anthony	GIS Coordinator	WCDPS GIS	apologru@co.westmoreland.pa.us	<i>Anthony Pologruto</i> ✓
Raser	Jonathon	HMManager	TetraTech	jonathan.raser@tetrattech.com	SIGN HERE
Smythe	Sandy	Finance	WCDPS	ssmythe@co.westmoreland.pa.us	<i>Sandra Smythe</i> ✓
Snyder	Clyde	Planner	TetraTech	clyde.snyder@tetrattech.com	<i>Clyde Snyder</i> ✓
Stevens	Daniel	PIO	WCDPS	dstevens@co.westmoreland.pa.us	<i>Daniel Stevens</i> ✓
Tantlinger	Christopher	HMO	WCDPS	ctantlin@co.westmoreland.pa.us	<i>Christopher Tantlinger</i> ✓



Hazard Mitigation Working Group  
Monthly Meeting



Last Name	First Name	Title	Representing	E-Mail	Signature
Tony	Subbio	Planner	TetraTech	tony.subbio@tetrattech.com	SIGN HERE
KRIVOKUCHA, P	PAULA		Emerg Mtg	PKRIVOKU@co.westmoreland	<i>Paula Krivokucha</i> ✓
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# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**March 12, 2014**

**Introductions:**

**Conference Call participants:**

Link: Meeting access number: 866-692-5721

Participant code: 7237813

**Review:**

Status update from Tetra Tech Inc.

- Risk Assessment meeting review
- Mitigation Strategy Development Workshop
- Mitigation Action Plan
- Public Strategy Meeting review

**Hazard Mapping:**

WIU map

Hazmat map

Interactive municipal map

**Best Practices in Mitigation:**

Safety Bulletin to Chemical Facilities

**Hazards & Mitigations:**

Project submissions list to date

Survey results to date

**Next Meeting & Location:**

April 9, 2014

# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

**March 12, 2014** 0906-0935

**Introductions:** Pologruto, Stevens, Tantlinger

**Conference Call participants:** Kelly, Ashton, Knox

Link: **Meeting access number: 866-692-5721**

**Participant code: 7237813**

### **Review:**

Status update from Tetra Tech Inc.

- Risk Assessment meeting review -*Finalizing the new updates, and rerunning the HAZUS models based on the information and new facilities provided by Anthony. Preparing to upload the hazard profiles to the HMP website with the exception of Environmental, Transportation, Dams, and Terrorism.*
- Mitigation Strategy Development Workshop –*the strategy will be from the information gathered from the Capability Assessment Surveys, of which only two have been received. Chris stated that there are many CAS and contact information in the uploaded single municipal files on SharePoint and could be used to direct contact the municipality to ask for their surveys to be updated because nearly all of them were post-approval of the last plan iteration.*
- Mitigation Action Plan – *This will be a result of the strategy development workshop.*
- Public Strategy Meeting review - *Should plan to have this meeting the last week of April perhaps 28, 29, 30 or May 1, 2? A single meeting due to the lack of attendance should be considered.*
- Next meeting – *Caitlin stated that 2 1/2 hours should be allotted for the next HMWG meeting for Capability Assessments and Mitigation Strategies in depth review.*
- Entire Draft – *Caitlin said it should be ready by late May or early June.*

### **Hazard Mapping:**

WUI map – *Anthony would like to expand on the map more specifically and was given the contact information for the DCNR contact Brian Vinski 724-238-1200 to get actual coordinates to define the map more appropriately.*

Hazmat map – *A map of HAZMAT responses on BING Maps has these responses from 2009-2014, an attempt to extract that information will be shared with Anthony from Chris.*

Interactive municipal map- *A listing of municipal websites was provided to Anthony for review and a discussion about creating a summary information box when you hover over a municipal area on the map will provide the local website and other hazard information and potentially their hazard mitigation projects and survey information.*

## **Best Practices in Mitigation:**

Safety Bulletin to Chemical Facilities – *Carried over from previous month. Additionally a concern about rail traffic has been heightened lately and recent press release stated that CSX would be sharing location and product contained on their rail lines with Pennsylvania Emergency Management Agency PEMA. This would be a good mitigation tool to consider protective and planning areas. It was asked that Caitlin add to the Transportation profile the new information about 48 of 65 municipalities in the County have rail line traffic running through them as a result of Dan's recent investigations of rail safety.*

## **Hazards & Mitigations:**

Project submissions list to date- *Caitlin will provide these on the SharePoint site as received*

Survey results to date – *Caitlin said that additional surveys have been received and it was believed that it was related to the work Dave Knox has conducted to gain further interest in his local area and municipality.*

Additional information provided by Chris Bova:

3/11/2014 email

*I will not be able to attend the meeting tomorrow, but I wanted to mention that I didn't really notice stormwater management being incorporated in the Hazard Mitigation Plan. I may be missing it somewhere, but if not, I think that is something that needs to have some attention. It's a priority for the county to obtain funding to complete a Phase II Stormwater Management Plan and I believe that is an allowable hazard mitigation expense. A Phase II Stormwater Management Plan would conduct stormwater runoff modeling for each of the eleven watersheds in Westmoreland County and would lead to ways to address the runoff in those watersheds. In turn, it would hopefully reduce the effects of flooding in certain areas of the county.*

## **Next Meeting & Location:**

April 9, 2014

# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**April 15, 2014**

### **Introductions:**

### **Conference Call participants:**

Link: Meeting access number: 866-692-5721

Participant code: 7237813

### **Review:**

Status update from Tetra Tech Inc.

- Quarterly Report-FEMA DHS
- Mitigation Strategy Development Workshop
- Mitigation Action Plan
- Public Strategy Meeting review
- Plan Maintenance Update Meeting-Working Group
- Consultant payment

### **Hazard Mapping:**

Transportation Map

WIU map-update

Hazmat map-update

Interactive municipal map-update

### **Best Practices in Mitigation:**

Act 9 Funds directed to waterway, drainage improvements

### **Hazards & Mitigations:**

Evaluation of Identified Hazards and Risks submittals list to date

Project submissions list to date

Survey results to date

### **Next Meeting & Location:**

April 29, 2014 0900-1200 Mitigation Strategy Public Meeting, Westmoreland EOC tentatively.

May 14, 2014 Regular meeting, Westmoreland EOC

# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

**April 15, 2014**-April 9, 2014 cancelled due to incident.

**Introductions:** Chris Bova, Darlene Bracken, Ron Cramer, Anthony Pologruto, Sandy Smythe, Daniel Stevens, Christopher Tantlinger

**Conference Call participants:** Caitlin Kelly, Dave Knox

Link: **Meeting access number: 866-692-5721**

**Participant code: 7237813**

### **Review:**

Status update from Tetra Tech Inc.-*It was reported that we are on schedule and on track for late June early July plan draft review, the capability assessments have been finalized to date and reviewed. Caitlin provided the work and updates on the Section 5, Capability Assessment Draft and Section 6, Mitigation Strategy for the plan update and reviewed with group in it's entirety. Multiple suggestions were made by group members and noted by Caitlin to be included in the draft.*

- Quarterly Report-FEMA DHS – *Reported complete and submitted by Caitlin on behalf of Westmoreland county.*
- Mitigation Strategy Development Workshop- *Has been scheduled at a new venue and the details will be forthcoming for the public press release.*
- Mitigation Action Plan-*Reviewed above during update by Caitlin.*
- Public Strategy Meeting - *reviewed*
- Plan Maintenance Update Meeting-Working Group- *asked members to prepare for this next step in completing the process of the update for the plan draft.*
- Consultant payment-*the first quarter payment has been received, the second quarter was submitted in February and has not been paid to date, and the third quarter payment is currently in process in the Chicago office.*

### **Hazard Mapping:**

Transportation Map-*The transportation map is complete per Anthony and the input of crash data from PennDOT can be released at this time and be included in the hazard profile at the discretion of TetraTech, there is a static and interactive map available.*

WIU map-update-*Anthony reported that a much better map will be available now that he has more locale data from the DCNR Forestry agency.*

Hazmat map-update-*A map is available and will be provided by link.*

Interactive municipal map-update- *The interactive municipal map that links to municipal websites is now available and can be provided as a link including the availability to list the reported hazards if desired, this was made possible by the work of Anthony and the GIS department.*

*Additionally a discussion was made on the glide path of the airports and the development related to those known areas.*

*Pictometry Update- Anthony stated that they are currently flying Westmoreland County and that 2 training sessions will be coming up and he hopes to have one for the Coroner's office and Public Safety.*

### **Best Practices in Mitigation:**

Act 9 Funds directed to waterway, drainage improvements

*Discussion on the availability of funds to be used from unconventional well drilling impact fees to complete some hazard mitigation projects are occurring and that if any projects are known to let the group know so we can capture them and relate them to the hazard profile and eventually any mitigation actions or strategies in the future. Chris Bova corrected the reference to Act 9 and stated that it is Act 13 Impact fees. He also stated that he can provide information on the Act 13 in a summary to be included in the language of the profile.*

### **Hazards & Mitigations:**

Evaluation of Identified Hazards and Risks submittals list to date-*Caitlin stated that a master spreadsheet continues to be updated and has the information related to the municipal responses.*

Project submissions list to date-*These are provided on the mitigation action table and can be reviewed as received and on the SharePoint site.*

Survey results to date- *These are provided on the mitigation action table and can be reviewed as received and on the SharePoint site.*

### **Next Meeting & Location:**

April 30, 2014 0900-1200 Mitigation Strategy Public Meeting –*Senior Judges Court Room, Fourth Floor Westmoreland County Court House Annex. Caitlin will not be able to attend the meeting in person, it will be conducted by Clyde Snyder and Jim Laffey if available. It is unknown if conference calling is available in the meeting room, but a phone is available. Parking: <http://www.co.westmoreland.pa.us/index.aspx?NID=317>*

May 14, 2014 Regular meeting, Westmoreland EOC



# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**May 21, 2014.**

### **Introductions:**

### **Conference Call participants:**

Link: Meeting access number: 866-692-5721  
Participant code: 7237813

### **Review:**

Status update from Tetra Tech Inc

- Mitigation Strategy Development Workshop conducted
- Mitigation Action Plan prioritized
- Public Strategy Meeting Conducted
- Municipal website requests and LEPC assistance for outreach
- Plan Maintenance Update -Working Group
- Complete Plan Maintenance Section
- Complete Draft HMP
- Hold Public Draft Plan Review meeting-PUBLIC
- Consultant payment

### **Hazard Mapping:**

### **Best Practices in Mitigation:**

### **Hazards & Mitigations:**

Evaluation of Identified Hazards and Risks submittals list to date-  
Project submissions list to date-  
Survey results to date-

### **Next Meeting & Location:**

June 10, 2014 0900-1200

02/21/2014 updated

## Hazard Mitigation Working Group Monthly Meeting



Last Name	First Name	Title	Representing	E-Mail	Signature
Ashton	Jack	Asst. Manager	MAWC	jashton@mawc.org	SIGN HERE
Bova	Chris	Deputy Dir.	WC Planning	cbova@co.westmoreland.pa.us	SIGN HERE
Bracken	Darlene	EM Specialist	PEMA	dbracken@pa.gov	SIGN HERE
Cramer	Ron	LEMC	New Alexandria	navfd@hotmail.com	SIGN HERE
Downs	Jeff	Representative	West Penn Power	jdowns@firstenergycorp.com	SIGN HERE
Jones	Brian	Deputy Dir.	WCDPS	bjones@co.westmoreland.pa.us	SIGN HERE
Keefe	Ellen	Member	WC Cleanways	ekeefe@westmorelandcleanways.org	SIGN HERE
Kelly	Caitlin	Planner	TetraTech	caitlin.kelly@tetrattech.com	CONFERENCE CALL
Knox	Dave	LEMC	Upper Burrell	knoxda@gmail.com	Conf. Call
Komondor	Gene	Planner	Red Cross	Gene_Komondor@redcross.org	SIGN HERE
Kopas	Ted	Commissioner	WC	fkopas@co.westmoreland.pa.us	SIGN HERE
Krivokucha	Paula	WCDPS Clerical	WCDPS	pkrivoku@co.westmoreland.pa.us	SIGN HERE
Laffey	Jim	Planner	TetraTech	jim.laffey@tetrattech.com	SIGN HERE
Matason	Richard	Member	NHT	richm1709@comcast.net	SIGN HERE
Pillsbury	Jim	Member	NRCS	jim@wcdpa.com	SIGN HERE
Pologruto	Anthony	GIS Coordinator	WCDPS GIS	apologru@co.westmoreland.pa.us	SIGN HERE
Raser	Jonathon	HMManager	TetraTech	jonathan.raser@tetrattech.com	SIGN HERE
Smythe	Sandy	Finance	WCDPS	ssmythe@co.westmoreland.pa.us	Sandy Smythe
Snyder	Clyde	Planner	TetraTech	clyde.snyder@tetrattech.com	SIGN HERE
Stevens	Daniel	PIO	WCDPS	dstevens@co.westmoreland.pa.us	SIGN HERE

As of 5/21/2014

Hazard Mitigation Working Group  
Monthly Meeting



Last Name	First Name	Title	Representing	E-Mail	Signature
Tantlinger	Christopher	HMO	WCDPS	<a href="mailto:ctantlin@co.westmoreland.pa.us">ctantlin@co.westmoreland.pa.us</a>	<i>[Signature]</i>
Tony	Subbio	Planner	TetraTech	<a href="mailto:tony.subbio@tetrattech.com">tony.subbio@tetrattech.com</a>	SIGN HERE
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# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

**April 15, 2014**-April 9, 2014 cancelled due to incident.

**Introductions:** Chris Bova, Darlene Bracken, Ron Cramer, Anthony Pologruto, Sandy Smythe, Daniel Stevens, Christopher Tantlinger

**Conference Call participants:** Caitlin Kelly, Dave Knox

Link: **Meeting access number: 866-692-5721**

**Participant code: 7237813**

### **Review:**

Status update from Tetra Tech Inc.-*It was reported that we are on schedule and on track for late June early July plan draft review, the capability assessments have been finalized to date and reviewed. Caitlin provided the work and updates on the Section 5, Capability Assessment Draft and Section 6, Mitigation Strategy for the plan update and reviewed with group in it's entirety. Multiple suggestions were made by group members and noted by Caitlin to be included in the draft.*

- Quarterly Report-FEMA DHS – *Reported complete and submitted by Caitlin on behalf of Westmoreland county.*
- Mitigation Strategy Development Workshop- *Has been scheduled at a new venue and the details will be forthcoming for the public press release.*
- Mitigation Action Plan-*Reviewed above during update by Caitlin.*
- Public Strategy Meeting - *reviewed*
- Plan Maintenance Update Meeting-Working Group- *asked members to prepare for this next step in completing the process of the update for the plan draft.*
- Consultant payment-*the first quarter payment has been received, the second quarter was submitted in February and has not been paid to date, and the third quarter payment is currently in process in the Chicago office.*

### **Hazard Mapping:**

Transportation Map-*The transportation map is complete per Anthony and the input of crash data from PennDOT can be released at this time and be included in the hazard profile at the discretion of TetraTech, there is a static and interactive map available.*

WIU map-update-*Anthony reported that a much better map will be available now that he has more locale data from the DCNR Forestry agency.*

Hazmat map-update-*A map is available and will be provided by link.*

Interactive municipal map-update- *The interactive municipal map that links to municipal websites is now available and can be provided as a link including the availability to list the reported hazards if desired, this was made possible by the work of Anthony and the GIS department.*

*Additionally a discussion was made on the glide path of the airports and the development related to those known areas.*

*Pictometry Update- Anthony stated that they are currently flying Westmoreland County and that 2 training sessions will be coming up and he hopes to have one for the Coroner's office and Public Safety.*

### **Best Practices in Mitigation:**

Act 9 Funds directed to waterway, drainage improvements

*Discussion on the availability of funds to be used from unconventional well drilling impact fees to complete some hazard mitigation projects are occurring and that if any projects are known to let the group know so we can capture them and relate them to the hazard profile and eventually any mitigation actions or strategies in the future. Chris Bova corrected the reference to Act 9 and stated that it is Act 13 Impact fees. He also stated that he can provide information on the Act 13 in a summary to be included in the language of the profile.*

### **Hazards & Mitigations:**

Evaluation of Identified Hazards and Risks submittals list to date-*Caitlin stated that a master spreadsheet continues to be updated and has the information related to the municipal responses.*

Project submissions list to date-*These are provided on the mitigation action table and can be reviewed as received and on the SharePoint site.*

Survey results to date- *These are provided on the mitigation action table and can be reviewed as received and on the SharePoint site.*

### **Next Meeting & Location:**

April 30, 2014 0900-1200 Mitigation Strategy Public Meeting –*Senior Judges Court Room, Fourth Floor Westmoreland County Court House Annex. Caitlin will not be able to attend the meeting in person, it will be conducted by Clyde Snyder and Jim Laffey if available. It is unknown if conference calling is available in the meeting room, but a phone is available. Parking: <http://www.co.westmoreland.pa.us/index.aspx?NID=317>*

May 14, 2014 Regular meeting, Westmoreland EOC

# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**June 10, 2014.**

### **Introductions:**

### **Conference Call participants:**

Link: Meeting access number: 866-692-5721  
Participant code: 7237813

### **Review:**

- Draft Plan

### **Hazard Mapping:**

- Draft Plan
- Pictometry Update

### **Best Practices in Mitigation:**

- Draft Plan

### **Hazards & Mitigations:**

- Draft Plan

### **Next Meeting & Location:**

July 13, 2014 0900-1200 Westmoreland County Department of Public Safety Conference Room



# **AGENDA notes**

## **HAZARD MITIGATION WORKING GROUP**

**June 10, 2014**.0905-1055

**Introductions:** Pologruto, Laffey, Tantlinger, Stevens, Bova

**Conference Call participants:** Caitlin Kelly

Link: Meeting access number: 866-692-5721

Participant code: 7237813

### **Review:**

- Draft Plan Sections reviewed 1, 2, 3, 4, 5, Flooding, 6, 7 (see attached)

### **Hazard Mapping:**

- Draft Plan Sections reviewed 1, 2, 3, 4, 5, Flooding, 6, 7
- Pictometry Update: Training to be scheduled tentatively for July 22, 2014.

### **Best Practices in Mitigation:**

- Draft Plan review

### **Hazards & Mitigations:**

- Draft Plan review

### **Next Meeting & Location:**

July 16, 2014 0900-1200 Westmoreland County Department of Public Safety Conference Room

**SECTION 1:** Introduction reviewed and edited, Appendices will be following, request for sign in sheet from Public stakeholders meeting requested.

**SECTION 2:** County profile reviewed, Caitlin asked Chris Bova to review carefully. Watershed Conservation district WCD, aging population analysis reviewed.

**SECTION 3:** Planning process reviewed. Greensburg Community outreach publication, look at participation, look at participation and check for any one that may have been missed. Add graphic of HM programs.

**SECTION 4:** Profiles and subsections. Reviewed Flooding only, and made several changes noted by Caitlin. Previous profiles were reviewed at earlier meeting.

**SECTION 5:** Capability assessments reviewed

**SECTION 6:** Mitigation Strategy reviewed

**SECTION 7:** Plan maintenance reviewed. Check for list of County Authorities.

**SECTION 8:** Plan adoption. Did not cover due to time restraints.

# **AGENDA**

## **HAZARD MITIGATION WORKING GROUP**

**July 9, 2014.**

### **Introductions:**

### **Conference Call participants:**

Link: Meeting access number: 866-692-5721  
Participant code: 7237813

### **Review:**

- Draft Plan noted additions, corrections, deletions.
- Project captures and website continuance [www.westmorelandhmp.com](http://www.westmorelandhmp.com)
- Public review timeline for draft and submission (August deadline)
- FEMA/PEMA review

### **Hazard Mapping:**

- Draft Plan map changes on highway color and other contrast issues.
- Pictometry Update

### **Best Practices in Mitigation:**

- Derry Township Stormwater concern

### **Hazards & Mitigations:**

- West Leechburg request for generator

### **Next Meeting & Location:**

August 13, 2014 0900-1200 Westmoreland County Department of Public Safety  
Conference Room

06/10/2014 updated

Hazard Mitigation Working Group  
 Monthly Meeting  
 Plan Draft Review






Last Name	First Name	Title	Representing	E-Mail	Signature
Ashton	Jack	Asst. Manager	MAWC	<a href="mailto:jashton@mawc.org">jashton@mawc.org</a>	SIGN HERE
Bova	Chris	Deputy Dir.	WC Planning	<a href="mailto:cbova@co.westmoreland.pa.us">cbova@co.westmoreland.pa.us</a>	<i>Chris Bova</i> SIGN HERE
Bracken	Darlene	EM Specialist	PEMA	<a href="mailto:dbracken@pa.gov">dbracken@pa.gov</a>	<i>Darlene Bracken</i> SIGN HERE
Cramer	Ron	LEMC	New Alexandria	<a href="mailto:navfd@hotmail.com">navfd@hotmail.com</a>	SIGN HERE
Downs	Jeff	Representative	West Penn Power	<a href="mailto:jdowns@firstenergycorp.com">jdowns@firstenergycorp.com</a>	SIGN HERE
Keefe	Ellen	Member	WC Cleanways	<a href="mailto:ekeefe@westmorelandcleanways.org">ekeefe@westmorelandcleanways.org</a>	SIGN HERE
Kelly	Caitlin	Planner	TetraTech	<a href="mailto:caitlin.kelly@tetrattech.com">caitlin.kelly@tetrattech.com</a>	SIGN HERE
Knox	Dave	LEMC	Upper Burrell	<a href="mailto:knoxda@gmail.com">knoxda@gmail.com</a>	SIGN HERE
Komondor	Gene	Planner	Red Cross	<a href="mailto:Gene_Komondor@redcross.org">Gene_Komondor@redcross.org</a>	SIGN HERE
Kopas	Ted	Commissioner	WC	<a href="mailto:fkopas@co.westmoreland.pa.us">fkopas@co.westmoreland.pa.us</a>	SIGN HERE
Krivokucha	Paula	WCDPS Clerical	WCDPS	<a href="mailto:pkrivoku@co.westmoreland.pa.us">pkrivoku@co.westmoreland.pa.us</a>	SIGN HERE
Laffey	Jim	Planner	TetraTech	<a href="mailto:jim.laffey@tetrattech.com">jim.laffey@tetrattech.com</a>	<i>Jim Laffey</i> SIGN HERE
Matason	Richard	Member	NHT	<a href="mailto:richm1709@comcast.net">richm1709@comcast.net</a>	SIGN HERE
Mertz	Roland	Director	WCDPS	<a href="mailto:rmertz@co.westmoreland.pa.us">rmertz@co.westmoreland.pa.us</a>	<i>R Mertz</i> SIGN HERE
Pillsbury	Jim	Member	NRCS	<a href="mailto:jim@wcdpa.com">jim@wcdpa.com</a>	SIGN HERE
Pologruto	Anthony	GIS Coordinator	WCDPS GIS	<a href="mailto:apologru@co.westmoreland.pa.us">apologru@co.westmoreland.pa.us</a>	<i>Anthony Pologruto</i> SIGN HERE
Raser	Jonathon	HMManager	TetraTech	<a href="mailto:jonathan.raser@tetrattech.com">jonathan.raser@tetrattech.com</a>	SIGN HERE
Smythe	Sandy	Finance	WCDPS	<a href="mailto:ssmythe@co.westmoreland.pa.us">ssmythe@co.westmoreland.pa.us</a>	<i>Sandy Smythe</i> SIGN HERE
Snyder	Clyde	Planner	TetraTech	<a href="mailto:clyde.snyder@tetrattech.com">clyde.snyder@tetrattech.com</a>	<i>Clyde Snyder</i> SIGN HERE
Stevens	Daniel	PIO	WCDPS	<a href="mailto:dstevens@co.westmoreland.pa.us">dstevens@co.westmoreland.pa.us</a>	<i>Daniel Stevens</i> SIGN HERE



06/10/2014 updated

## Hazard Mitigation Working Group Monthly Meeting Plan Draft Review



Last Name	First Name	Title	Representing	E-Mail	Signature
Tantlinger	Christopher	HMO	WCDPS	<a href="mailto:ctantlin@co.westmoreland.pa.us">ctantlin@co.westmoreland.pa.us</a>	 SIGN HERE
Tony	Subbio	Planner	TetraTech	<a href="mailto:tony.subbio@tetrattech.com">tony.subbio@tetrattech.com</a>	 SIGN HERE
<i>CASAC</i>	<i>Nick</i>	<i>Deputy Dir.</i>	<i>DPB</i>		 SIGN HERE
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# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

July 9, 2014.

**Introductions:** Bova, Bracken, Caesar, Laffey, Mertz, Smythe, Snyder, Stevens, Tantlinger

### **Conference Call participants:**

Link: **Meeting access number: 866-692-5721**  
**Participant code: 7237813**

### **Review:**

Draft Plan noted additions, corrections, deletions. *All hazard profile sections reviewed with the following notations from TetraTech representative Jim Laffey.*

1. *Section 4.3.1.3 Avalanche the number 7,400 is used and in 4.3.1.5.4 the number 7,500 is used. The second reference is redundant we should either change the number or eliminate the second sentence all together.*
2. *Sandy has information on mine subsidence that occurred in Allegheny Township 2 or 3 years ago. She will get the details so it can be included .*
3. *Section 4.3.14 Winter Storms. Lehigh Valley appears.*
4. *Section 4.3.15-3. Remove references to Penn Forest Dam, Boydstown and Ashland as they are not in Westmoreland County.*
5. *Section 4.3.16-1 Change US Highway 116 to 119.*
6. *Section 4.3.17-3 Delete the second to last entry.*
7. *Section 4.3.2-3 Reservoir Storage Levels are not for Westmoreland. Are there Reservoirs in this vicinity that should be quoted? What about the Ohio River Basin Commission. Also did you use the information Chris Tantlinger sent on R.A.I.N?*
8. *Table 4.3.2-5 Are these figures correct?*
9. *Section 4.3.2.5-3 the reference (NYSDPC 2011) is used and not defined.*
10. *Table 4.3.20-3 and 20-4 Typo needs fixed.*
11. *Section before 4.3.20-3 is still highlighted.*
12. *Table 4.3.20-6 Mt. Vie should be Mt. View.*
13. *Table 4.3.3-2 the word Western is misspelled.*
14. *Table 4.3.5-1 in the Topic Row, change County Designated? To County Declaration*
15. *Check each table that has all of the municipalities listed. Add T, B, C, (Township, Borough, City) to make consistent.*
16. *Use the same font throughout the documents.*
17. *Table 4.3.5-10, delete Indiana County Saltsburg, Armstrong County Apollo, Armstrong County West Leechburg,*



18. Table 4.3.6-2 Risk Assessment - Hailstorm, the table is difficult to read. Can the columns be separated with a space for easier reading?
  19. Table 4.3.6-2 Newtonsburg should be Newlonsburg.
  20. Table 4.3.7-3, change County Designated? To County Declaration
  21. Section 4.3.7.4, Error Message
  22. Section 4.3.7.5-2, Error Message
  23. Table 4.3.7-5, Donegal Borough and Township are transposed, switch the data around to match.
  24. Table 4.3.7-6, Donegal Borough and Township are transposed, switch the data around to match
  25. Section 4.3.17 Fire (Urban/Structural Fire), Chris Tantlinger questioned as to why there is nothing in the plan on Fire Prevention. Would like this to focus to engage Municipalities to challenge Fire Depts. To perform more Fire Prevention activities. Clyde can draft something if you feel that this should be included.
  26. Table 4.3.20-7 Highway deaths, source is PennDot we are checking with the County Coroner to see if he can verify this information. PennDot information does not seem to be accurate.
  27. Chris Tantlinger wants to know what will happen with the Web Site on the conclusion the of project. Will the county still be able to access it or will Tetra Tech transfer the data to the County?
- Project captures and website continuance [www.westmorelandhmp.com](http://www.westmorelandhmp.com) Website domain name is available and County has ability to replicate and create forms to maintain information consistency and the information can be received from the current website in an archive.
  - Public review timeline for draft and submission (August deadline) July 9 to August 8 will be the public review timeline period.
  - FEMA/PEMA review August 16<sup>th</sup> is the targeted date.

### **Hazard Mapping:**

- Draft Plan map changes on highway color and other contrast issues. *Issue resolved*
- Pictometry Update Anthony had previous engagement and had to depart before report.

### **Best Practices in Mitigation:**

- Derry Township Stormwater concern. *Information from news source placed in municipal folder.*

### **Hazards & Mitigations:**

- West Leechburg request for generator *Their Emergency Management Coordinator was directed to the HMP website and an orientation package was sent to them to review and place their request in a project capture form.*

### **Next Meeting & Location:**

August 13, 2014 0900-1200 Westmoreland County Department of Public Safety  
Conference Room

# AGENDA notes

## HAZARD MITIGATION WORKING GROUP

**August 13, 2014.**

**Introductions:** *Chris Bova, Clyde Snyder, Chris Tantlinger; **Excused:** Jack Ashton, Darlene Bracken, Caitlin Kelly; **Conference Call:** Dave Knox, Jim Laffey*

### **Conference Call participants:**

Link: **Meeting access number: 866-692-5721**  
**Participant code: 7237813**

### **Review:**

- FEMA/PEMA review-Clyde stated that Caitlin would have the final draft ready for review as early as next week and to have any changes submitted ASAP. The final plan review meeting will be held at 9:00am on September 10, 2014 tentatively at the Conservation District office if available. The final plan review meeting was scheduled to be conducted in August per the plan update timeline.
- Public feedback-Chris Tantlinger stated that only one phone call was received and it was regarding the wells drilled at the Beaver Run reservoir near drinking water. Chris Bova provided some information on the operation. Despite press releases and a newspaper article about the plan update no further interest or consideration of the plan was made know to the Public Safety Office. Chris Bova stated that some municipalities such as Derry Borough and Unity Township discussed it with him and that the information was distributed to the Township Association in a blast email. Clyde also stated that a contact sheet of all the municipal outreach is available and was directed to Caitlin for inclusion as outreach documentation.

### **Hazard Mapping:**

- Pictometry Connect-Pictometry training has been completed by three DPS personnel and it is noted that a flyover can be conducted over a disaster area that receives a Presidential declaration could be very helpful in mitigating future disasters in that area. It was discussed that it would be appropriate to include that in the language narrative of mitigation strategies with a sentence or paragraph regarding this capability. Chris Tantlinger will contact Anthony to get this ASAP.

## **Best Practices in Mitigation:**

- Beaver run report on drilling operations-*Discussion on the anonymous caller that said 38 wells were drilled on the Beaver Run Reservoir property in relation to a water quality study done by Indiana University of Pennsylvania was presented. Dave Knox and Chris Bova responded that these studies are a comprehensive and also a good indicator of the impacts to the reservoir. (Dave Knox provided links to the reports in an email). It was also discussed that the seasonal changes had impacted the water at the reservoir in a measurable amount and it was noted that this is revelation on how natural impacts can create more substantial man made activities.*

## **Hazards & Mitigations:**

- Generator affidavit-*It is required that the generator not be placed or used in a flood plain and that no ground would be disturbed. To date, only an affidavit from Ligonier Borough has been received. Dave Knox added that Upper Burrell had presented a mitigation project for an emergency generator. Chris Tantlinger discussed the conditions and priorities of the generators use and that strategic placement will be considered with care and use instructions being given to whomever the care is determined. The County Logistics officer could check for condition and accessibility on a semiannual basis.*
- HHW Household Hazardous Waste collection was discussed and a partnership or sponsorship of the LEPC Local Emergency Planning Commission is being discussed. Mitigation of these wastes would be a direct impact reduction on the hazards to the environment and should be encouraged in future mitigation concerns. (Notes: \$100,000 expended for the one day event at WCCC with DEP picking up half the tab and the cost is about \$35,000-\$50,000 and about 500 individuals showed up last time.
- CRS Community Rating System information was relayed on new information and 2 new videos available under the training and videos tab and a Pocket Guide to the CRS etc. There are currently no communities involved but the information is available through [www.CRSresources.org](http://www.CRSresources.org) and Chris Bova stated that a reduction in flood insurance costs can be realized through this program and he will check into having staff within planning to relay this information where appropriate.

## **Next Meeting & Location:**

September 10, 2014 0900-1000 Location TBD



06/10/2014 updated

Hazard Mitigation Working Group  
 Monthly Meeting  
 Plan Draft Review



Last Name	First Name	Title	Representing	E-Mail	Signature
Ashton	Jack	Asst. Manager	MAWC	jashton@mawc.org	<i>Excused</i> SIGN HERE
Bova	Chris	Deputy Dir.	WC Planning	cbova@co.westmoreland.pa.us	<i>Chris Bova</i> SIGN HERE
Bracken	Darlene	EM Specialist	PEMA	dbracken@pa.gov	<i>Excused</i> SIGN HERE
Cramer	Ron	LEMC	New Alexandria	navfd@hotmail.com	SIGN HERE
Downs	Jeff	Representative	West Penn Power	jdowns@firstenergycorp.com	SIGN HERE
Keefe	Ellen	Member	WC Cleanways	ekeefe@westmorelandcleanways.org	SIGN HERE
Kelly	Caitlin	Planner	TetraTech	caitlin.kelly@tetrattech.com	<i>Excused</i> SIGN HERE
Knox	Dave	LEMC	Upper Burrell	knoxda@gmail.com	<i>Conferencing</i> SIGN HERE
Komondor	Gene	Planner	Red Cross	Gene_Komondor@redcross.org	SIGN HERE
Kopas	Ted	Commissioner	WC	fkopas@co.westmoreland.pa.us	SIGN HERE
Laffey	Jim	Planner	TetraTech	jim.laffey@tetrattech.com	<i>Conferencing</i> SIGN HERE
Matason	Richard	Member	NHT	richm1709@comcast.net	SIGN HERE
Mertz	Roland	Director	WCDPS	rmertz@co.westmoreland.pa.us	SIGN HERE
Pillsbury	Jim	Member	NRCS	jim@wcdpa.com	SIGN HERE
Pologruto	Anthony	GIS Coordinator	WCDPS GIS	apologru@co.westmoreland.pa.us	SIGN HERE
Raser	Jonathon	HMManager	TetraTech	jonathan.raser@tetrattech.com	SIGN HERE
Smythe	Sandy	Finance	WCDPS	ssmythe@co.westmoreland.pa.us	SIGN HERE
Snyder	Clyde	Planner	TetraTech	clyde.snyder@tetrattech.com	<i>Clyde Snyder</i> SIGN HERE
Stevens	Daniel	PIO	WCDPS	dstevens@co.westmoreland.pa.us	SIGN HERE
Tantlinger	Christopher	HMO	WCDPS	ctantlin@co.westmoreland.pa.us	<i>Chris Tantlinger</i> SIGN HERE

06/10/2014 updated

### Hazard Mitigation Working Group Monthly Meeting Plan Draft Review



Last Name	First Name	Title	Representing	E-Mail	Signature
Tony	Subbio	Planner	TetraTech	tony.subbio@tetratech.com	SIGN HERE
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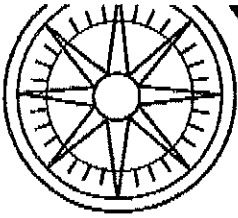
## **APPENDIX D: MUNICIPAL PARTICIPATION DOCUMENTATION**

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This appendix provides documentation of Municipality's participation as part of this plan update process.







# ALLEGHENY TOWNSHIP

## WESTMORELAND COUNTY PENNSYLVANIA

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

11-22-2013

**Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Allegheny Township**

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Allegheny, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Allegheny:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- 
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Lee Schumaker

Position/Department: Director of Public Safety

Phone Number: 724-842-4641

Email Address: schumaker@alleghenytownship.net

Alternate/Secondary POC: Susan Teagarden

Position/Department: Admin. Ass't/Zoning

Phone Number: 724-842-4641

Email Address: teagarden@alleghenytownship.net

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Susan Teagarden

Position/Department: Admin. Ass't/Zoning Officer

Phone Number: 724-842-4641

Email Address: teagarden@alleghenytownship.net

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

# ALLEGHENY TOWNSHIP SUPERVISORS

WESTMORELAND COUNTY

136 COMMUNITY BUILDING ROAD  
LEECHBURG, PA 15656

PHONE (724) 842-4641  
FAX (724) 845-9290

## FACSIMILE TRANSMITTAL SHEET

DELIVER TO: CHRIS TAWTLINGER

FAX NUMBER: 724-600-7388

FROM: LEE SCHUMAKER

REFERENCE: HAZARD MITIGATION

DATE: 11-20-13

TOTAL PAGES INCLUDING COVER: 3

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Tuesday, December 10, 2013 2:54 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Lee Schumaker

<b>What Municipality or Organization are you with? *</b>	Allegheny Township
<b>Name of Project *</b>	Moreland Manor
<b>Existing Issue Requiring the Project *</b>	Flooding
<b>Brief Description of the Project</b>	Replacement of 56"x38" oblong pipe with 71" x 48" oblong pipe. Prevention of (4) homes being continuing flooded and the continue flooding of a roadway affecting 75 homes.
<b>Cost of the Project</b>	\$90,000
<b>Project Location</b>	Moreland Manor Circle /State Route 356
<b>Proposed Start Date of Project</b>	2014-03-01
<b>Proposed Duration of Project (in months)</b>	2 months
<b>Potential Funding Sources</b>	Allegheny Township
<b>Contact Name *</b>	Lee Schumaker
<b>Email Address *</b>	<a href="mailto:schumaker@alleghenytownship.net">schumaker@alleghenytownship.net</a>

Date : April 30, 2014

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate - Borough of Avonmore

Dear Mr. Tantlinger:

Per your letter, dated March 27, 2014, the Borough of Avonmore is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Avonmore:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Cindy Rupert

Position/Department: Director 4-1/EMA

Phone Number: 724-639-8323/412-389-4064

Email Address: cindy\_rupert@comcast.net

Alternate/Secondary POC: Rebecca Steele

Position/Department: Borough Secretary

Phone Number: 724-697-4415

Email Address: avonmoreborough3@yahoo.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Lucien Bove

Position/Department: Borough Engineer

Phone Number: 724-925-9269

Email Address: boveengineering@comcast.net

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: April 30, 2014

Municipality/Organization: Borough of Avonmore

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  X  Check here if you want access to the project SharePoint site

Name: Cindy Rupert

Title/Department: Director 4 - 1 Avonmore EMA

Address: P O Box 357 Avonmore PA 15618-0357

Telephone: Office 724-639-8323 Cell 412-389-4064

Fax: 724-639-9396

E-mail: cindy\_rupert@comcast.net

Contact #2 (optional)  X  Check here if you want access to the project SharePoint site

Name: Rebecca Steele

Title/Department: Borough Secretary

Address: 619 Allegheny Avenue Avonmore PA 15618

Telephone: 724-697-4415

Fax: 724-697-1322



E-mail: avonmoreboro3@yahoo.com

What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

X  E-mail                      \_\_\_\_\_ Regular Mail                      \_\_\_\_\_ Telephone



Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

- **SMALL TRIBUTARY WITH NUMEROUS INADEQUATE PIPES TO CARRY WATER AWAY IN PERIODS OF HEAVY RAIN, COMPLICATED BY DEBRIS ACCUMULATION THAT CAUSES WATER TO FLOOD STREETS AND HOMES OVER A LARGE AREA.**
- **OLD RAILROAD TUNNEL**
- **STATE ROUTE 156**
- **TWO PONDS WITH SPILLWAY/SMALL DAMS/5<sup>TH</sup> STREET EXTENSION AND NEAR SEWAGE TX PLANT**
- **STEEP UNPAVED STREET WITH POTENTIAL SLIDE AREAS/INDIANA AVENUE**
- **LARGE, FLAT FARMLAND ACREAGE WITH POTENTIAL FOR MARCELLUS WELL ACTIVITY**
- **NUMEROUS NATURAL GAS WELLS**

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

- **ONGOING DRAINAGE IMPROVEMENTS TO CATCH BASINS AND FLOOD PRONE AREAS**
- **REPAIRS TO DAMAGED STREETS AND ALLEYS**
- **DEBRIS REMOVAL**

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

- **ONGOING DRAINAGE IMPROVEMENTS TO CATCH BASINS AND FLOOD PRONE AREAS**
- **REPAIRS TO DAMAGED STREETS AND ALLEYS**
- **IMPROVEMENTS TO INFRASTRUCTURE TO HANDLE HEAVY RUNOFF**
- **DEBRIS REMOVAL**





## Evaluation of Identified Hazards and Risk

Name: CINDY RUPERT

Title: DIRECTOR 4-1

Jurisdiction: BOROUGH OF AVONMORE

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	I	POTENTIAL EXISTS
Droughts and Water Supply Deficiencies	I	POTENTIAL EXISTS
Earthquakes	I	POTENTIAL EXISTS
Energy Emergencies	I	POTENTIAL EXISTS
Fire	I	POTENTIAL EXISTS
Fixed Nuclear Facility	NC	
Floods	I	POTENTIAL EXISTS
Hazardous Materials	I	POTENTIAL EXISTS
Landslides	I	POTENTIAL EXISTS
Nuclear Attack	NC	
Subsidence, Sinkhole	I	POTENTIAL EXISTS
Terrorism	I	POTENTIAL EXISTS
Tornadoes, Hurricanes Wind storms	I	POTENTIAL EXISTS
Transportation Accidents	I	POTENTIAL EXISTS
Winter Storms	I	POTENTIAL EXISTS

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### ***Natural***

- |   |   |
|---|---|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input checked="" type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input checked="" type="checkbox"/> Radon Exposure                  |
| <input checked="" type="checkbox"/> Expansive Soils                       | <input type="checkbox"/> Tsunami                                    |
| <input checked="" type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                                    |
| <input checked="" type="checkbox"/> Hailstorm                             | <input checked="" type="checkbox"/> Wildfire                        |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |   |
| <input checked="" type="checkbox"/> Invasive Species                      |   |

#### ***Human-Caused***

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                        |
| <input checked="" type="checkbox"/> Civil Disturbance              | <input checked="" type="checkbox"/> Urban Explosion           |
| <input checked="" type="checkbox"/> Disorientation                 | <input checked="" type="checkbox"/> Utility Interruption      |
| <input checked="" type="checkbox"/> Drowning                       | <input checked="" type="checkbox"/> War and Criminal Activity |
| <input checked="" type="checkbox"/> Environmental Hazards          |   |

**Other Comments:**

- **SMALL TRIBUTARY WITH NUMEROUS INADEQUATE PIPES TO CARRY WATER AWAY IN PERIODS OF HEAVY RAIN, COMPLICATED BY DEBRIS ACCUMULATION THAT CAUSES WATER TO FLOOD STREETS AND HOMES OVER A LARGE AREA.**
- **OLD RAILROAD TUNNEL**
- **STATE ROUTE 156**
- **TWO PONDS WITH SPILLWAY/SMALL DAMS/5<sup>TH</sup> STREET EXTENSION AND NEAR SEWAGE TX PLANT**
- **STEEP UNPAVED STREET WITH POTENTIAL SLIDE AREAS/INDIANA AVENUE**
- **LARGE, FLAT FARMLAND ACREAGE WITH POTENTIAL FOR MARCELLUS WELL ACTIVITY**
- **NUMEROUS NATURAL GAS WELLS**



### Appendix 3: Capability Assessment Survey

Jurisdiction: BOROUGH OF AVONMORE

Point of Contact Name and Title: BECKY STEELE/SECRETARY

Phone: 724-697-4415

Email: avonmoreborough3@yahoo.com

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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			X	BORO EMA	+		
Emergency Operations Plan	X	2002		BORO EMA	+		
Disaster Recovery Plan							
Evacuation Plan	X	2002		BORO EMA	+		
Continuity of Operations Plan							
NFIP	X						
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	X	2010		AVONMORE BORO			APPROVED BY FEMA AND DCED
Floodplain Management Plan							



Appendix 3: Capability Assessment Survey

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				
	Zoning Regulations	X	1970's				
Subdivision Regulations	X						WESTMORELAND CO
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	1970's		AVONMORE BORO			
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	X			LATEST IBC			LATEST IBC
Fire Code							
Firewise							
Storm Ready							
Other							





**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	X		BOVE ENGINEERING CO	
Planners or engineers (with natural and/or human caused hazards knowledge)	X		BOVE ENGINEERING CO	
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		BOVE ENGINEERING CO	
Emergency Manager	X		DONALD MORGAN, DIRECTOR & GINDY RUPERT DEPUTY DIRECTOR	
NFIP Floodplain Administrator	X		BOVE ENGINEERING CO	
Land Surveyors	X		BOVE ENGINEERING CO	
Scientists or staff familiar with the hazards of the community	X		BOROUGH COUNCIL, MAINTENANCE AND BOVE ENGINEERING CO	
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program	X		BOVE ENGINEERING CO	
Grant writers or fiscal staff to handle large/complex grants		X		
Staff with expertise or training in Benefit-Cost Analysis		X		
Other				

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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



**4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.





5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability	X		
Fiscal Capability	X		
Community Political Capability	X		
Community Resiliency Capability	X		





COOK TOWNSHIP  
P.O. BOX 221  
STAHLSTOWN, PA 15687  
PHONE & FAX 724-593-7471  
[cooktwp@lhtot.com](mailto:cooktwp@lhtot.com)

November 7, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Cook Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Cook, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Cook:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”) to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation(a. k. a. ) the Planning Partner Expectations,) specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information including:
  - \*Structure and facility inventory data
  - \*Identification of new development and anticipated development
  - \*Identification of natural hazard risk areas

- \*Identification of natural hazard events and losses that have impacted your community in the last five years
- \*Identification of plans, studies, reports and ordinances addressing natural hazard risk
- \*Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions.

- Support public outreach efforts in your community which may include:
    - \*Providing notices of the planning project on your municipal website with links to a County project website
    - \*Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media etc.)
    - \*Advertising and supporting public meetings in your area
    - \*Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community.
  - \* Assist with the identification of stakeholders within your community that should be Informed and potentially involved with the planning process.
    - Completing data and information collection survey forms in a timely manner.
    - Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to your community.
    - Involve your local NFIP Floodplain Administrator in the planning process.
    - Review draft Plan sections when requested and provide comment and input as appropriate.
    - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
    - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POC's are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: **Debbie Rhodes**  
 Phone Number: **724-593-7471**  
 Cell phone: **724-972-1349**

Position/Department: **Secretary**  
 Email Address: **cooktwp@lhtot.com**

Alternate/Secondary: **Rich Umbaugh**  
 Phone Number: **724-593-7471**  
 Cell Phone: **724-640-6954**

Position/Department: **Supervisor**  
 Email Address: **cooktwp@lhtot.com**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

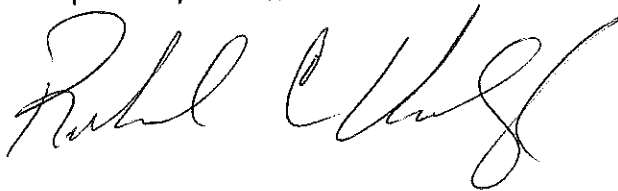
Name of NFIP FPA: **Debbie Rhodes**  
Phone Number: **724-593-7471**

Position/Department: **Secretary**  
Email Address: **cooktwp@lhtot.com**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

Richard Umbaugh  
Supervisor/Roadmaster

A handwritten signature in black ink, appearing to read "Richard Umbaugh". The signature is written in a cursive style with a large initial "R" and a long, sweeping underline.

**BOROUGH OF DELMONT**  
**77 GREENSBURG STREET**  
**DELMONT, PENNSYLVANIA 15626**  
PHONE: 724 468- 4422 FAX: 724 468- 4356  
[delmontborough@comcast.net](mailto:delmontborough@comcast.net)

October 16, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Delmont Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of Delmont, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Delmont:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: *Kirk Nolan*                      Position/Department: *Emergency Management Coordinator*  
 Phone Number: *412-370-0851*                      Email Address: *nolans4@comcast.net*

Alternate/Secondary POC:                      Position/Department: *Delmont Borough Police Chief*  
*T. J. Klobucar*                                      Email Address: *delmontpdchief@comcast.net*  
 Phone Number: *724-787-9886*

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: *Bill Heaps*                      Position/Department: *Public Works Supervisor*  
 Phone Number: *724-689-3632*                      Email Address: *delmontborough@comcast.net*

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely, *Karen L. L. Stale*  
*Sec. / Treas.*

DELMONT BOROUGH  
 77 GREENSBURG ST.  
 DELMONT, PA. 15626



WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 12/12/13

Municipality/Organization: Delmont Boro

County: Westmoreland Co.

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Kirk E. Nolan

Title/Department: EMC

Address: 538 Monticello Dr. Delmont PA 15626

Telephone: (412) 370-0851

Fax: (724) 468-0389

E-mail: Kirk.nolan@icloud.com

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Chief T.J. Klobucar

Title/Department: Chief Delmont Boro P.D.

Address: 77 Greensburg St. Delmont, PA 15626

Telephone: (724) 468-8501

Fax: (724) 468-0389

E-mail: DelmontPDchief@comcast.net





What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail       Regular Mail       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

NONE - Discussed with board personnel

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

NONE - Discussed with board personnel

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

NONE - Discussed with board personnel



## Evaluation of Identified Hazards and Risk

Name: Kirk E. Nolan

Title: EMC

Jurisdiction: Delmont Boro

### PART I

<b>Identified Hazards 2009 HMP</b>	<b>How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?</b>  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	<b>Additional Comments</b>
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |  |  |
|--|--|
| <input type="checkbox"/> Avalanche/Glacier                     | <input checked="" type="checkbox"/> Lighting Strike      |
| <input type="checkbox"/> Coastal Erosion                       | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                      | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                       | <input type="checkbox"/> Tsunami                         |
| <input type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                      |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |

**Other Comments:**

[Empty comment box]



# BOROUGH OF DERRY



November 19, 2013

OFFICE OF THE SECRETARY

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
91 Public Safety Road  
Greensburg, PA 15601

**Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Borough of Derry, Westmoreland  
County**

Dear Mr. Tantlinger:

The Borough of Derry, Westmoreland County is committed to participate in the Westmoreland County Hazard Mitigation Plan (HMP) Update Project.

Derry Borough wishes to participate by the following:

1. Authorize the Westmoreland County Hazard Mitigation Working Group, to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation as follows:
  - Submit this letter of Authorization and Acknowledgement to the Westmoreland County Department of Public Safety, attention to Mr. Christopher Tantlinger.
  - Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
  - Support the Working Group selected to oversee the development of this plan.
  - Provide representation at municipal Planning Committee meetings, which is to include three meetings over a six to nine month period with a Mitigation Strategy Workshop Meeting.
  - Provide data and information about our community as requested by the Working Group or the contract consultant information, including the following:

- Structure and facility inventory data
- Identification of new development and anticipated development
- Identification of natural hazard risk areas
- Identification of natural hazard events and losses that have impacted our community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk.
- Identify mitigation activity in our community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media including newsletters, flyers, and social media
  - Advertising and supporting public meetings
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in our community
- Assist with the identification of stakeholders within our community that should be informed and potentially involved with the planning process.
- Complete data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant risk to our community.
- Involve our local NFIP Floodplain Administrator in the Planning Process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of the governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent of the planning process.

3. Assign the following individuals to be the Points of Contact of our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings and assuring the other minimum requirements of jurisdictional participation as detailed in the Planning Partner Expectations.

Primary POC: Stephen Kozar W. Kozar  
Phone # 724-640-7994

Emergency Management Coordinator  
[kozar41@verizon.net](mailto:kozar41@verizon.net)

Secondary POC: Brock Dwire  
Phone # 724-630-5758

Derry Borough Fire Chief  
[brockdwire@gmail.com](mailto:brockdwire@gmail.com)

Third POC: David Bolen  
Phone # 724-600-9161

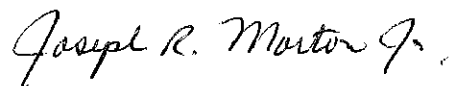
Mayor  
[mayorbolen@yahoo.com](mailto:mayorbolen@yahoo.com)



4. Our current designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is the Zoning Hearing Officer.

We recognize that failure to meet the minimum participation expectations and deadlines, as determined by the working Group will result in our municipality being excluded from the planning process.

Very truly yours,

A handwritten signature in cursive script that reads "Joseph R. Morton Jr.".

Joseph R. Morton,  
Derry Borough Council Vice-President

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 2-13-2014

Municipality/Organization: Derry Twp. Supv.

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Dave Slifka

Title/Department: Supervisor

Address: 5321 Rt 982 Derry Pa 15627

Telephone: 724-640-0718

Fax: 724-694-5860

E-mail: dslifk@comcast.net

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Terry Giovanni

Title/Department: EMA Director

Address: 5321 Rt 982 Derry Pa 15627

Telephone: 724-640-0100

Fax: 724-694-5860

E-mail: tgiovanni1@adelphia.net



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail                       Regular Mail                       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.



WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 03/11/14

Municipality/Organization: Donegal Borough

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: SARAH HARKCOM

Title/Department: COUNCIL PRESIDENT

Address: P.O. Box 200 Donegal PA 15628

Telephone: 724 593 4222

Fax: \_\_\_\_\_

E-mail: donegalboro@gmail.com

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: BRIT GRIMES

Title/Department: MAYOR

Address: \_\_\_\_\_

Telephone: 724 787 6770

Fax: donegalboro@gmail.com





**Other Comments:**

[Empty comment box]





## Evaluation of Identified Hazards and Risk

Name: Brit Gaines

Title: Mayor

Jurisdiction: Roweal Borough

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |  |
|---|--|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike      |
| <input type="checkbox"/> Coastal Erosion                                  | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                         |
| <input checked="" type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input checked="" type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                                 |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |

### Appendix 3: Capability Assessment Survey

Jurisdiction: Doneydt Borough

Point of Contact Name and Title: Britt Grimes Mayor

Phone: \_\_\_\_\_

Email: brittongrimes002@gmail.com

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan			X		TETRA TECH		
Emergency Operations Plan			X		Robt. Nicodemus		
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							





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				
Zoning Regulations							
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	Oct 2008	<i>Donna Phipps</i> <i>Donna Phipps</i>	X	X		
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							

2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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



3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



5-Very Willing

3-Moderately Willing

0-Unwilling to Adopt Policies/Programs

Score: 5

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability		X	
Fiscal Capability		X	
Community Political Capability		X	
Community Resiliency Capability		X	



WESTMORELAND COUNTY

## DONEGAL TOWNSHIP SUPERVISORS

137 Hoffers Lane

Jones Mills, Pennsylvania 15646

DONEGAL TWP.

ROAD

MAINTENANCE

October 24, 2013

Date

Supervisors (724) 593-2619

Secretary

(724) 593-6309

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Donegal Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Donegal, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Donegal:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: *Thomas A. Stull, Jr.* Position/Department: *Chairman of Board*  
 Phone Number: *724-593-2619* Email Address: *Supervisors@Lhtot.com*

Alternate/Secondary POC: *Trudy Harkcom* Position/Department: *Secretary/Treasurer*  
 Phone Number: *724-593-6309* Email Address: *dontwp@Lhtot.com*

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: *Thomas A. Stull, Jr.* Position/Department: *Chairman of Board*  
 Phone Number: *724-593-2619* Email Address: *Supervisors@Lhtot.com*

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

*Thomas A. Stull, Jr.*

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: November 19 2013

Municipality/Organization: Doregal Township

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Thomas A. Stull, Jr.

Title/Department: Chairman of Board

Address: 137 Hoffman Lane, Jones Mills, PA 15646

Telephone: 724-593-2619

Fax: 724-593-6310

E-mail: supervisors@Lhtot.com

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Trudy MARKCOM

Title/Department: Sec. Treas.

Address: 137 Hoffman Ln, Jones Mills, PA 15646

Telephone: 724-593-6309

Fax: 724-593-6310

E-mail: don@Lhtot.com





What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail       Regular Mail       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Doregal LAKE Dam -  
possible Floodings.  
below DAM breast

Doregal Township submitted this project to West Co. Hazard Mitigation for fundings Oct 25, 2010. It was not funded

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.



## Evaluation of Identified Hazards and Risk

Name: Tom Still Sr.

Title: Chairman of Board

Jurisdiction: Donregal Township

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |  |
|---|--|
| <input type="checkbox"/> Avalanche/Glacier                          | <input type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                            | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                           | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                            | <input type="checkbox"/> Tsunami                         |
| <input checked="" type="checkbox"/> Extreme Temperature <i>Cold</i> | <input type="checkbox"/> Volcano                         |
| <input type="checkbox"/> Hailstorm                                  | <input type="checkbox"/> Wildfire                        |
| <input type="checkbox"/> Hurricane, Tropical Storm, Nor'easter      |  |
| <input type="checkbox"/> Invasive Species                           |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |

**Other Comments:**

[Empty rectangular box for comments]

### Appendix 3: Capability Assessment Survey

Jurisdiction: Donegal Township Point of Contact Name and Title: Tom Stull Sr - Chairman Board  
 Phone: 724-593-2619 Email: Supervisors@Lhtot.com

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan							
Emergency Operations Plan	X	updated 11/2013		Donegal Twp	+	+	
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							



Appendix 3: Capability Assessment Survey

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Zoning Regulations							
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	Adopted 2008		Donegal Township	+	+	
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							





Appendix 3: Capability Assessment Survey

2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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



3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources for **hazard mitigation purposes** (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



Appendix 3: Capability Assessment Survey

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability	X		
Fiscal Capability	X		
Community Political Capability	X		
Community Resiliency Capability	X		



**Board of Supervisors of  
East Huntingdon Township**

2494 Rt. 981, P.O. Box 9     Alverton, Pennsylvania 15612-0009

Paul E. Hodgkiss  
Howard J. Keefer  
Joel B. Suter

Phones: (724) 887-6141  
(724) 887-7480  
Fax: (724) 887-3102

October 24, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – East Huntingdon Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of East Huntingdon, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of East Huntingdon:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website

**Board of Supervisors of  
East Huntingdon Township**

2494 Rt. 981, P.O. Box 9      Alverton, Pennsylvania 15612-0009

Paul E. Hodgkiss  
Howard J. Keefer  
Joel B. Suter

Phones: (724) 887-6141  
(724) 887-7480  
Fax: (724) 887-3102

October 24, 2013

- o Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - o Advertising and supporting public meetings in your area.
  - o Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: **James King**      Position/Department: **Emergency Coordinator**  
Phone Number: **412 558-0241**      Email Address: **kingff74@easthuntingdonvfd.com**

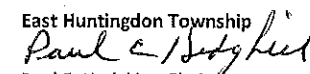
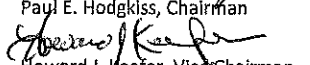
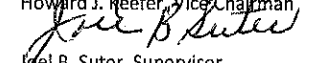
Alternate/Secondary POC:      Position/Department:  
**Howard J. Keefer**      **Supervisor/E Huntingdon Twp.**  
Phone Number: **724 696-4850**      Email Address: **keefe@czoom.net**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:      Position/Department:  
**Paul E. Hodgkiss**      **Supervisor/E Huntingdon Twp.**  
Phone Number:      Email Address:  
**724 696-3038**      **eht@zoominternet.net**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

East Huntingdon Township  
  
Paul E. Hodgkiss, Chairman  
  
Howard J. Keefer, Vice Chairman  
  
Joel B. Suter, Supervisor



WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 11-12-13

Municipality/Organization: East Huntingdon Twp EMA

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: James W King

Title/Department: Director / East Huntingdon Twp EMA

Address: 2494 Route 981, P.O. Box 9, Alverton, PA 15612

Telephone: 412-558-0241

Fax: \_\_\_\_\_

E-mail: KingFF74@yahoo.com

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Howard Keefer

Title/Department: Supervisor / East Huntingdon Twp

Address: 2494 Route 981, P.O. Box 9, Alverton, PA 15612

Telephone: 724-887-7480 ex 202

Fax: \_\_\_\_\_

E-mail: entsecretary@zoominternet.net



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail

Regular Mail

Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

overflow of Creek and Streams in Residential areas

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

Flooding in our Center Part of Township



### Appendix 3: Capability Assessment Survey

Jurisdiction: East Huntingdon Township

Point of Contact Name and Title: Paul E. Hodgkiss, Chairman

Phone: 724 887-6141

Email: ehtsupervisors@zoominternet.net

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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	✓	10/24/13		Supervisors			
Emergency Operations Plan	✓	4/22/13		Supervisors			
Disaster Recovery Plan							
Evacuation Plan							
Continuity of Operations Plan							
NFIP							
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	✓	1/6/11		Supervisors			
Floodplain Management Plan							





Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Zoning Regulations							
Subdivision Regulations	✓	7/5/69					
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)							
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	✓	2/28/02					
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation	✓	11/4/04					
Building Code							
Fire Code							
Firewise							
Storm Ready							
Other							

**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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)		✓		
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				

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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				



4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	✓		
Administrative and Technical Capability	✓		
Fiscal Capability	✓		
Community Political Capability	✓		
Community Resiliency Capability	✓		

# East Vandergrift Borough

P.O. Box 460  
254 Kennedy Ave.  
East Vandergrift, PA 15629  
Phone: (724) 567-7213  
Fax: (724) 567-1783  
www.evboro.com

**November 8, 2013**

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate- East Vandergrift Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Borough of East Vandergrift, is committed to participate in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of East Vandergrift:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.

- Provide representation at municipal Planning Committee meetings (13 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
  - Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
  - Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

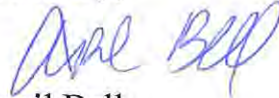
Primary POC: Anthony Buyny- Council member (until January 2014) & Emergency Management Coordinator

Phone: 724-972-6018 (cell)

Email address: [afbuyny@comcast.net](mailto:afbuyny@comcast.net)

4. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being exclude from the planning process.

Sincerely,

A handwritten signature in blue ink that reads "April Bell". The signature is written in a cursive style with a large initial "A" and "B".

April Bell

East Vandergrift Borough Secretary

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 11/12/2013

Municipality/Organization: EAST VANDERGRIFT Emergency Mgmt.

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Anthony Buyny

Title/Department: Emergency Management Coordinator

Address: 254 Kennedy Ave.  
P.O. Box 460 East Vandergrift, PA 15629

Telephone: Office 724-567-7213 Cell 724-972-6018

Fax: 724-567-1783

E-mail: AFBuyny@comcast.net

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_





What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail                       Regular Mail                       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

RAILROAD TRACKS THROUGH ENTIRE LENGTH OF BOROUGH  
PLACARDED TANK CARS.

HILLSIDE/LANDSLIDES DURING EXTREME RAIN STORMS AND HEAVY  
SNOW THAWS.

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

WATER/SEWAGE SEPARATION PLAN IS SCHEDULED TO BEGIN  
IN FEBRUARY 2014. THIS PROJECT WILL INVOLVE A MAJOR  
OVERHAUL OF THE BOROUGH'S SEWAGE & WATER DRAINAGE  
SYSTEM.

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

Update Evacuation Plan for Municipality



## *Fairfield Township*

### **Board of Supervisors**

Vaughn E. Tantlinger, Chairman  
James M. Brown, Vice-Chairman  
Paul J. Altimus, Supervisor  
Emma J. Brendlinger, Sec-Tres



159 Midget Camp Road  
Bolivar, PA 15923-9636  
Phone 724-235-2140  
FAX 724-235-2752

E-MAIL [fairfield1773@verizon.net](mailto:fairfield1773@verizon.net)  
Website [www.fairfieldtwp.com](http://www.fairfieldtwp.com)

November 14, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Fairfield Township

Dear Mr. Tantlinger:

Per your letter, dated November 14, 2013 the Township of Fairfield, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Fairfield:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.

- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Vaughn E. Tantlinger  
Phone Number: 724-235-2140

Position/Department: Chairman/Roadmaster  
Email Address: fairfield1773@verizon.net

Alternate/Secondary POC: James M. Brown  
Phone Number: 724-235-2140

Position/Department: Vice-Chairman/Roadmaster  
Email Address: fairfield1773@verizon.net

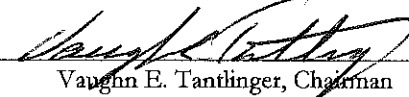
4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Michael Bartley  
Phone Number: 724-235-9700

Position/Department: Ordinance Officer  
Email Address: securikey.investigations@gmail.com

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,  
FAIRFIELD TOWNSHIP SUPERVISORS

  
\_\_\_\_\_  
Vaughn E. Tantlinger, Chairman

14 NOV. 2013

DATE

### Appendix 3: Capability Assessment Survey

Jurisdiction: FAIRFIELD TOWNSHIP

Point of Contact Name and Title: VAUGHN E. TANTLINGER, CHAIRMAN

Phone: 724-235-2140

Email: fairfield1773@verizon.net

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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	x	2009		Twp/Co.		---	County
Emergency Operations Plan	x	2011		Township		---	Township
Disaster Recovery Plan	n/a	2011					
Evacuation Plan	n/a						
Continuity of Operations Plan	n/a						
NFIP							
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	n/a	2011					
Floodplain Management Plan	n/a	2011					



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				
Zoning Regulations	n/a						
Subdivision Regulations	n/a						County Plan.
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)							County Plan.
Open Space Management Plan (or Parks/Rec or Greenways Plan)							County Plan.
Stormwater Management Plan / Ordinance							County Plan.
Natural Resource Protection Plan	n/a						
Capital Improvement Plan	n/a						
Economic Development Plan	n/a						
Historic Preservation Plan	n/a						
Farmland Preservation							County Plan.
Building Code							State
Fire Code							State
Firewise	n/a						
Storm Ready	n/a						
Other							

- 2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)		x		
Planners or engineers (with natural and/or human caused hazards knowledge)		x		
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)		x		
Emergency Manager	x			Coordinator & 3 Assistants
NFIP Floodplain Administrator		x		
Land Surveyors		x		
Scientists or staff familiar with the hazards of the community		x		
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA’s HAZUS program		x		
Grant writers or fiscal staff to handle large/complex grants		x		
Staff with expertise or training in Benefit-Cost Analysis		x		
Other				



- 3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming		x		
Community Development Block Grants (CDBG)	x		Westmoreland County	
Special Purpose Taxes		x		
Gas / Electric Utility Fees		x		
Water / Sewer Fees	x		Tri Community Sewer Authority	Part of the Township
Stormwater Utility Fees		x		
Development Impact Fees		x		
General Obligation, Revenue, and/or Special Tax Bonds		x		
Partnering Arrangements or Intergovernmental Agreements	x		Indiana/Westmoreland COG	
Other				

- 4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction’s political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score:     3**

- 5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability		x	
Administrative and Technical Capability		x	
Fiscal Capability	x		
Community Political Capability		x	
Community Resiliency Capability	x		

## Eith, Becca

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Thursday, December 19, 2013 10:50 AM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Vaughn Tantlinger

<b>What Municipality or Organization are you with? *</b>	Fairfield Township
<b>Name of Project *</b>	patterson bridge
<b>Existing Issue Requiring the Project *</b>	weight restriction & deficient
<b>Brief Description of the Project</b>	replacement of current bridge due to potential colaps
<b>Cost of the Project</b>	100,000
<b>Project Location</b>	TR 990 Patterson Road
<b>Proposed Start Date of Project</b>	2014-05-01
<b>Proposed Duration of Project (in months)</b>	6 monthes
<b>Potential Funding Sources</b>	C.D.B.G.
<b>Contact Name *</b>	Vaughn Tantlinger
<b>Email Address *</b>	<a href="mailto:fairfield1773@verizon.net">fairfield1773@verizon.net</a>

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Thursday, March 27, 2014 1:17 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Supervisor Vaughn Tantlinger

<b>What Municipality or Organization are you with? *</b>	Fairfield Township
<b>Name of Project *</b>	Creek Road Project
<b>Existing Issue Requiring the Project *</b>	Flooding of 6 homes
<b>Brief Description of the Project</b>	Planning, engineering and corrections to mitigate Tubmill Creek recurring flooding that affects 6 residences, and Pennsylvania State Route 1006.
<b>Cost of the Project</b>	Medium
<b>Project Location</b>	Addresses: 913, 909, 901, 885, 877, 871 Creek Road, Bolivar PA 15923
<b>Proposed Start Date of Project</b>	2014-06-01
<b>Proposed Duration of Project (in months)</b>	3
<b>Potential Funding Sources</b>	None
<b>Contact Name *</b>	Supervisor Vaughn Tantlinger
<b>Email Address *</b>	<a href="mailto:fairfield1773@verizon.net">fairfield1773@verizon.net</a>

Date

November 7, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Greensburg City

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the City of Greensburg, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Greensburg City:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website



- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: *Les Harvey*  
 Phone Number: *724-838-4305*

Position/Department:  
*Building Code Official*  
 Email Address: *Enter. Mgmt Coordinator*

Alternate/Secondary POC:  
 Phone Number: *Susan Trout*  
*724-838-4326*

*lharvey@greensburgpa.org*  
 Position/Department:  
~~*Code Enforcement Mgmt Admin*~~  
 Email Address:  
*strota@greensburgpa.org*

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: *Barb Champini*  
 Phone Number: *724-838-4335*

Position/Department:  
*Planning*  
 Email Address:  
*bchampini@greensburgpa.org*

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,  
*Susan M. Trout, City Administrator*

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 12-11-13

Municipality/Organization: CITY OF GREENSBURG

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: LES HARVEY

Title/Department: DIR. EMS MGT. CITY OF GREENSBURG

Address: 416 S. MAIN ST

Telephone: 724-838-4305

Fax: 724-838-4328

E-mail: LHARVEY@GREENSBURG PA. ORG

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Susan M. Trout

Title/Department: City Administrator

Address: 416 S Main St., Greensburg, PA 15601

Telephone: 724 838-4324

Fax: 724 838-4350

E-mail: strout@greensburgpa.org



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail       Regular Mail       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

We have suffered damage to our ice rink <sup>and fields</sup> at Lynch Field due to flooding throughout the year

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Mt. Pleasant St. Flood Project - completed  
<sup>and levee</sup>  
Jack's Run Flood Project - completed  
Northmont Flood Project - design completed

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

Possible retention tanks for storm water overflows in the downtown area



## Evaluation of Identified Hazards and Risk

Name: LES HARVEY

Title: DIR EMC. MGT

Jurisdiction: CITY OF GREENSBURG

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire		
Fixed Nuclear Facility		
Floods	I	
Hazardous Materials		
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	I	
Tornadoes, Hurricanes Wind storms	I	
Transportation Accidents	NC	
Winter Storms	I	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |  |
|---|--|
| <input type="checkbox"/> Avalanche/Glacier                                | <input type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                         |
| <input type="checkbox"/> Extreme Temperature                              | <input type="checkbox"/> Volcano                         |
| <input checked="" type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                                 |  |

#### *Human-Caused*

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                        |
| <input checked="" type="checkbox"/> Civil Disturbance              | <input checked="" type="checkbox"/> Urban Explosion           |
| <input checked="" type="checkbox"/> Disorientation                 | <input checked="" type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                                  | <input checked="" type="checkbox"/> War and Criminal Activity |
| <input checked="" type="checkbox"/> Environmental Hazards          |   |

**Other Comments:**

[Empty rectangular box for comments]





### Appendix 3: Capability Assessment Survey

Jurisdiction: CITY OF GREENSBURG

Point of Contact Name and Title: LES HARVEY

Phone: 724-838-4305

Email: L.HARVEY@GREENSBURGPA.ORG

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate its estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan	X	10-12-09		W.M.C			
Emergency Operations Plan	X	2-13-12		CITY OF GBC			
Disaster Recovery Plan			X				
Evacuation Plan	X	2-13-12		CITY OF GBC			
Continuity of Operations Plan							
NFIP	X	2/14/11		PLANNING	Neutral	+	
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	X	2/14/11		PLANNING			ORD # 2009 of 2011
Floodplain Management Plan							



Appendix 3: Capability Assessment Survey

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				
Zoning Regulations	X	1971		PLANNING	+	+	Updated regularly
Subdivision Regulations	X	1971		PLANNING	+	+	
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	2006 2009 2013		PLANNING	+	+	
Open Space Management Plan (or Parks/Rec or Greenways Plan)	X	2007		PLANNING	+	+	
Stormwater Management Plan / Ordinance	X	1995		PLANNING	+	+	
Natural Resource Protection Plan	X	2006					
Capital Improvement Plan	X	2006					
Economic Development Plan	X	2006					
Historic Preservation Plan	X	2006					
Farmland Preservation							
Building Code							
Fire Code							
Firewise							
Storm Ready							
Other							



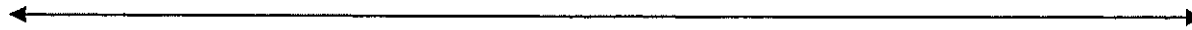
2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State or Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming	✓		PLANNING / FISCAL	
Community Development Block Grants (CDBG)	✓		PLANNING / COUNTY	
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	✓		CITY ADMIN	
Other				

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



5-Very Willing

3-Moderately Willing

0-Unwilling to Adopt Policies/Programs

Score: 5

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in Appendix 4.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			X
Administrative and Technical Capability			X
Fiscal Capability			X
Community Political Capability			X
Community Resiliency Capability			X



# Hempfield

TOWNSHIP

## BOARD OF SUPERVISORS

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John Silvis, VICE-CHAIRMAN  
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Jerry Fagert, ASSISTANT SECRETARY  
Sherry Magretti Hamilton, ASSISTANT TREASURER

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Andrew L. Walz, TOWNSHIP MANAGER/SECRETARY  
Bruce R. Beitel, ASSISTANT TOWNSHIP MANAGER  
Mike Volpe, DIRECTOR OF PUBLIC WORKS  
Jason M. Winters, DIRECTOR OF PARKS & RECREATION

*A Great Place to Raise a Family*

October 29, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate -Hempfield Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Hempfield, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Hempfield:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

1132 Woodward Drive, Suite A, Greensburg, PA 15601

724-834-7232 724-834-5510 - FAX

[www.hempfieldtp.com](http://www.hempfieldtp.com)

*Hempfield Township is an Equal Opportunity Employer*

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Bruce Beitel

Position/Department: Assistant Manager

Phone Number: 724-834-7232 X 127

Email Address: bbeitel@hempfieldtwp.org

Alternate/Secondary POC: Robert Gerlach

Position/Department: Emergency Mgt. Coord.

Phone Number: 724-640-6336

Email Address: RGerlach@HempfieldEMA.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Leonard Dellera

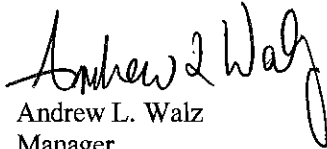
Position/Department: Zoning/Code Officer

Phone Number: 724-834-7232 X 129

Email Address: ldellera@hempfieldtwp.org

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

A handwritten signature in black ink that reads "Andrew L. Walz". The signature is written in a cursive style with a large, looping "W" and a long, sweeping "Z".

Andrew L. Walz  
Manager  
Hempfield Township

dar/ALW

cc:Supervisors

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 7/21/14

Municipality/Organization: Hempfield Township

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Bruce Beitel

Title/Department: Public Safety Director

Address: 1132 Woodward Drive Suite A Greensburg, Pa 15601

Telephone: 724-834-7232 ext 127

Fax: 724-853-8815

E-mail: bbeitel@hempfieldtwp.org

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Robert Gerlach

Title/Department: Emergency Management Coordinator

Address: 1132 Woodward Drive Suite A Greensburg, PA 15601

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_



E-mail:           Rgerlach@hempfielddema.com          

**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

  X   E-mail

  X   Regular Mail

           Telephone



**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**





### Appendix 3: Capability Assessment Survey

Jurisdiction: Hempfield Township

Point of Contact Name and Title: Bruce Beitel Assistant Town Manager

Phone: 724-834-7232 ext 127

Email: bbeitel@hempfieldtpa.org

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction:	Change Since Last Plan:	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	X			Westmoreland County	0		
Emergency Operations Plan	X	3/24/14		Emergency Management	0		
Disaster Recovery Plan			X	Emergency Management			
Evacuation Plan	X	3/24/14		Emergency Management	0		
Continuity of Operations Plan			X	Emergency Management			
NFIP							
NFIP – Community Rating System							
Floodplain Regulations (Spec. NFIP Flood Damage Prevention Ordinance)	X	12/27/10		Code Office	0		
Floodplain Management Plan							



Appendix 3: Capability Assessment Survey

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				
Zoning Regulations	X	2/4/14		Code Office	O		
Subdivision Regulations	X	1/29/75		Code Office	O		
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X						
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	X	10/24/05		Code Office	O		
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	X	9/28/09		Code Office	O		
Fire Code			X				
Firewise							
Storm Ready			X	Emergency Management			
Other							





**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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



**3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources for *hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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



**4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.





**5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			
Administrative and Technical Capability			
Fiscal Capability			
Community Political Capability			
Community Resiliency Capability			



## Evaluation of Identified Hazards and Risk

Name: Bruce Beitel

Title: Assistant Town Manager

Jurisdiction: Hempfield Township

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	I	
Hazardous Materials	I	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	I	
Transportation Accidents	I	
Winter Storms	I	



## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |   |
|---|---|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input checked="" type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input checked="" type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                                    |
| <input checked="" type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                                    |
| <input checked="" type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                                   |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |   |
| <input type="checkbox"/> Invasive Species                                 |   |

#### *Human-Caused*

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                        |
| <input checked="" type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion                      |
| <input type="checkbox"/> Disorientation                            | <input checked="" type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                                  | <input checked="" type="checkbox"/> War and Criminal Activity |
| <input checked="" type="checkbox"/> Environmental Hazards          |   |



**Other Comments:**

[Empty rectangular box for comments]





## HUNKER BOROUGH

Phone: 724-925-6535  
Fax: 724-925-6535  
E-Mail: HunkerBorough@verizon.net

402 CONSTITUTION AVENUE  
P O BOX 350  
HUNKER PA 15639

November 14, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate---Hunker Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of Hunker, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Hunker:

1. Authorized the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations) specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC) below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings ( ~3 meeting over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about our community as requested by the Working Group or the contract consultant information, including:
  - . Structure and facility inventory data
  - . Identification of new development and anticipated development
  - . Identification of natural hazard risk areas
  - . Identification of natural hazard events and losses that have impacted

Our community in the last five years.

- . Identification of plans, studies, reports and ordinances addressing Natural hazard risk.
- . Identify mitigation activity in our community in the last five years, Including progress on previously identified mitigation actions.

- Support public outreach efforts in our community which may include:
  - . Providing notices of the planning project on our municipal website with Links to a County project website
  - . Providing notice of the planning project, the availability of Plan Documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - . Advertising and supporting public meetings in our area.
  - . Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in our community.
- Assist with the identification of stakeholders within our community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium)( risk to our community
- Involve our local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of our governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assign the following persons to be point of contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: President Lisa Colarusso  
Phone: 724-925-3731

Position: Council President  
email: [hunkerborough@verizon.net](mailto:hunkerborough@verizon.net)

Alternate POC: Daniel C McKay  
Phone: 724-600-9543

Position: EMC Director 11  
email: [Paintdan85@hotmail.com](mailto:Paintdan85@hotmail.com)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:  
Phone:

Position:  
email:

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the WorkingGroup will result in our municipality being excluded from the planning process.

Sincerely,



Doris Slater  
Vice President  
Hunker Borough Council

HUNKER BOROUGH  
P.O. BOX 350  
402 CONSTITUTION AVE  
HUNKER, PENNSYLVANIA 15639  
724-925-6535

DATE: 11-15-13

FAX INFORMATION

TO: Westmoreland County Department of  
Public Safety  
Chris Tantlinger, Hazmat Coordinator

FAX#: 724-600-7388

FROM: Hunker Borough

FAX#: 724-925-6535

COMMENTS

Total Pages: 4

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 9:29 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Genarator for Community Center
<b>Existing Issue Requiring the Project *</b>	No back-up power for Hunker EOC
<b>Brief Description of the Project</b>	Back-up gen install and wired into building
<b>Cost of the Project</b>	Low
<b>Project Location</b>	Hunker community Center
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	Genral Fund
<b>Contact Name *</b>	Daniel McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>

**Eith, Becca**

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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 9:34 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel C McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Air Conditioning, community center
<b>Existing Issue Requiring the Project *</b>	No A/C in Community Building / Community Shelter
<b>Brief Description of the Project</b>	Installation of A/C in community building / Community Emergency cooling center / Local EOC. Wall mounted A/C units or Attic mounted condenser
<b>Cost of the Project</b>	Low
<b>Project Location</b>	402 Constitution Ave, Hunker pa 15639
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	Genral Fund
<b>Contact Name *</b>	Daniel C McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>



**Eith, Becca**

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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 9:39 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Water Leakage in basement of Community Building
<b>Existing Issue Requiring the Project *</b>	Water leaking into our community building ( file room )
<b>Brief Description of the Project</b>	Every time it rains water leaks in our community buildings basement level file storage and town meeting area. We believe it is going to take French drains added around building but not sure. Concerns over foundation eroding.
<b>Cost of the Project</b>	Medium
<b>Project Location</b>	402 Constitution Ave, Hunker, PA 15639
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	Genral Fund
<b>Contact Name *</b>	Daniel McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>

**Eith, Becca**

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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 9:45 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Bellson ST. needs pavement
<b>Existing Issue Requiring the Project *</b>	Gravel rd, certain parts of the road sink and ruts appear requiring the residents to bottom out their cars when passing over
<b>Brief Description of the Project</b>	Road will have to be dug up in a few places and a sub road built up, new asphalt applied and proper drainage installed.
<b>Cost of the Project</b>	Medium
<b>Project Location</b>	Belson St, Hunker, PA 15639
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	General Fund
<b>Contact Name *</b>	Daniel McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>

**Eith, Becca**

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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 9:52 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Storm Water Catch Basin Re-Direction
<b>Existing Issue Requiring the Project *</b>	Water washes down middle of street and washes out gravel on other side of road
<b>Brief Description of the Project</b>	The water runs down the middle of the road when there is a catch basin on the left and right corner of the intersection, the water runs between both basins and across the road and washes the gravel out. A brim of asphalt to direct the water to one side of the road would be required to fix the issue.
<b>Cost of the Project</b>	Low
<b>Project Location</b>	intersection of Walnut and Bridge St.
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	Genral Fund
<b>Contact Name *</b>	Daniel McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>

**Eith, Becca**

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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 9:58 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel MCKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Home Demolition
<b>Existing Issue Requiring the Project *</b>	Abandon home, public safety hazard, Falling apart needs Demolished
<b>Brief Description of the Project</b>	Home needs Demolished and wreckage taken away
<b>Cost of the Project</b>	3500.00
<b>Project Location</b>	Bridge St.
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	General Fund
<b>Contact Name *</b>	Daniel MCKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>

**Eith, Becca**

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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 10:05 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Locust St.
<b>Existing Issue Requiring the Project *</b>	Settlement under road causing the road to sink in certain spots.
<b>Brief Description of the Project</b>	Road needs dug up and sub floor installed to prevent road from sinking
<b>Cost of the Project</b>	Medium
<b>Project Location</b>	Locust St, Hunker, PA 15639
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	General Fund
<b>Contact Name *</b>	Daniel McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>

**Eith, Becca**

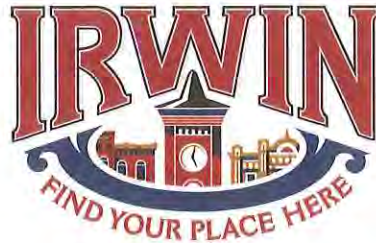
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**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Sunday, December 08, 2013 10:09 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Daniel McKay

<b>What Municipality or Organization are you with? *</b>	Hunker Borough
<b>Name of Project *</b>	Walnut St Bridge
<b>Existing Issue Requiring the Project *</b>	Corner posts of bridge eroding
<b>Brief Description of the Project</b>	Concrete corner posts of bridge eroding, needs concrete work done to bridge
<b>Cost of the Project</b>	Medium
<b>Project Location</b>	Bridge of Walnut next to FireHall
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	2
<b>Potential Funding Sources</b>	General Fund
<b>Contact Name *</b>	Daniel McKay
<b>Email Address *</b>	<a href="mailto:paintdan85@hotmail.com">paintdan85@hotmail.com</a>





February 25, 2014

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate –Borough of Irwin

Dear Mr. Tantlinger:

Per your letter, the Borough of Irwin is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Irwin:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data

- Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Mary Benko

Position/Department: Manager

Phone Number: 724-864-3100

Email Address: irwinmanager@comcast.net

Alternate/Secondary POC: Justin Mochar

Position/Department: IVFD Chief

Phone Number: 724-864-3106

Email Address: firechief57@comcast.net

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Lucien Bove

Position/Department: Engineer

Phone Number: 724-925-9269

Email Address [boveengineering@comcast.net](mailto:boveengineering@comcast.net)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Mary L. Benko, Manager

**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions):  
Caitlin Kelly Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
(302) 283-2218 Fax: (302) 454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: February 17, 2014

Municipality/Organization: Borough of Irwin

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  X  Check here if you want access to the project SharePoint site

Name: Mary Benko

Title/Department: Irwin Borough Manager

Address: 424 Main St. Irwin PA. 15642

Telephone: 724-864-3100

Fax: 724-864-3108

E-mail: irwinmanager@comcast.net

Contact #2 (optional)  X  Check here if you want access to the project SharePoint site

Name: Justin Mochar

Title/Department: Irwin Volunteer Fire Department

Address: 518 Western Ave., P.O. Box 139 Irwin, PA. 15642

Telephone: 724-864-3106

Fax: 724-864-3107

E-mail: firechief57@comcast.net



**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

E-mail                       Regular Mail                       Telephone

**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

Flooding at Irwin Park

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

None

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**

None



### Appendix 3: Capability Assessment Survey

Jurisdiction: Irwin Borough Point of Contact Name and Title: Mary Benko, Manager

Phone: 724-864-3100 Email: irwinmanager@comcast.net

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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			X	Westmd. Co.			
Emergency Operations Plan							
Disaster Recovery Plan							
Evacuation Plan							
Continuity of Operations Plan							
NFIP	x						
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	x	Updated 2010					Appvd. By FEMA and DCED
Floodplain Management 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				
Zoning Regulations	x	Updated2014					
Subdivision Regulations	x	1993					
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	x	2007					
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	x	1992					
Natural Resource Protection Plan							
Capital Improvement Plan	x	2010					
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	x	Latest IBC					
Fire Code							
Firewise							
Storm Ready							
Other							

- 2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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)	X		Bove Engineering Company	
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		Bove Engineering Company	
Emergency Manager				
NFIP Floodplain Administrator	X		Bove Engineering Company	
Land Surveyors	X		Bove Engineering Company	
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				

- 3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming				
Community Development Block Grants (CDBG)	?		Westmd. Co. Planning Dept.	Not sure if these funds are eligible for hazard mitigation
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				

- 4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction’s political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score: \_\_\_\_ 3 \_\_\_\_**

- 5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability		X	
Fiscal Capability	X		
Community Political Capability		X	
Community Resiliency Capability		X	



November 12, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

CITY OF LATROBE  
*Administration and  
Finance Department*

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Latrobe City

Dear Mr. Tantlinger:

901 Jefferson Street  
P.O. Box 829  
Latrobe, PA 15650  
(724) 539-8548  
(724) 537-4802 fax

Per your letter, dated October 11, 2013 the City of Latrobe, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the City of Latrobe:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - o Structure and facility inventory data
  - o Identification of new development and anticipated development
  - o Identification of natural hazard risk areas
  - o Identification of natural hazard events and losses that have impacted your community in the last five years
  - o Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - o Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - o Providing notices of the planning project on your municipal website with links to a County project website
  - o Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)



- o Advertising and supporting public meetings in your area.
- o Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the **Plan** by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Alexander J. Graziani

Position/Department: City Manager/Admin.

Phone Number: 724-787-6520

Email Address: [agraziani@cityoflatrobe.com](mailto:agraziani@cityoflatrobe.com)

Alternate/Secondary POC: Carl Bollinger

Position/Department: Emergency Mgmt. Coord.

Phone Number: 724-433-5352

Email Address: [Crboll52@netzero.net](mailto:Crboll52@netzero.net)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Ann E. Powell


Position/Department: Code/Zoning Officer

Phone Number: 724-537-3580

Email Address: [apowell@cityoflatrobe.com](mailto:apowell@cityoflatrobe.com)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

  
Alexander J. Graziani  
City Manager

**Eith, Becca**

---

**From:** Susan Crouse <winterset@verizon.net>  
**Sent:** Saturday, February 22, 2014 11:17 AM  
**To:** Kelly, Caitlin  
**Subject:** hazard mitigation forms

COMPLETED FORM FOLLOWS:

**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions):  
Caitlin Kelly Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
(302) 283-2218 Fax: (302) 454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: February 22, 2014

Municipality/Organization: Laurel Mountain Borough

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Susan G Crouse

Title/Department: \_\_\_\_\_

Address: 11 Beechwood Road, Lauglintown, PA 15655

Telephone: 724 238-6844

Fax: \_\_\_\_\_

E-mail: winterset@verizon.net

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

E-mail                       Regular Mail                       Telephone

**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**



**BOROUGH OF LIGONIER**  
TOWN HALL  
LIGONIER, PENNSYLVANIA 15658

Date: October 18, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update Authorization  
and Letter of Intent to Participate - Ligonier Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of Ligonier is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Ligonier:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (3 meetings over 6-9 Months, including a Kick-off Meeting and a Mitigation Strategy. Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the

contract consultant information, including:

- o Structure and facility inventory data
  - o Identification of new development and anticipated development
  - o Identification of natural hazard risk areas
  - o Identification of natural hazard events and losses that have impacted your community in the last five years
  - o Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - o Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - o Providing notices of the planning project on your municipal website with links to a County project website
  
    - o Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - o Advertising and supporting public meetings in your area.
    - o Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Paul A. Fry

Position/Department: Director of Public works

Phone Number: 724-238-9852

Email Address: [ligonierborodpw@comcast.net](mailto:ligonierborodpw@comcast.net)

Alternate/Secondary POC: Chris Stouffer

Position/Department: EMC

Phone Number: 724-433-9845

Email Address: castouffer@yahoo.com

4. Our designated local Floodplain Administrator (FAA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Ben Faas

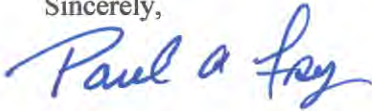
Position/Department: Engineer/Eads Group

Phone Number: 814-445-6551

Email Address: bfaas@eadsgroup.com

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Paul A Fry

Sec-Treas/ DPW



### Appendix 3: Capability Assessment Survey

Jurisdiction: Borough of Ligonier

Point of Contact Name and Title: Paul A Fry Secretary-Treasurer

Phone: 724-238-9852

Email: ligonierboro@comcast.net

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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				
<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	X	11/12/2009	WCDCPS	+	±	To be revised
Emergency Operations Plan	X	2/13/2003	Boro Council	+	+	
Disaster Recovery Plan						
Evacuation Plan						
Continuity of Operations Plan						
NFIP						
NFIP – Community Rating System						
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	X	3/17/2011	Boro Council	+	+	Managed by Boro Engineer
Floodplain Management Plan						



Appendix 3: Capability Assessment Survey

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Zoning Regulations	X	7/8/2010		Boro Council	+	+	Needs revised
Subdivision Regulations	X	1994		Boro Council	+	+	Needs revised
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	1989		Lig. Boro Lig. Twp.	0	+	Needs updated
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	X	2012		ABIS Inc.	+	+	Inforced by 3rd Party
Fire Code							
Firewise							
Storm Ready							
Other							





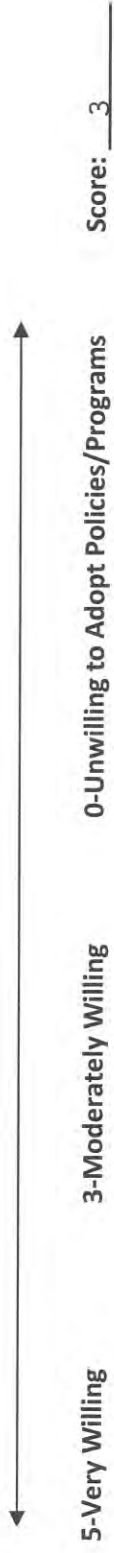
2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.





5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability	X		
Fiscal Capability	X		
Community Political Capability	X		
Community Resiliency Capability	X		



LOYALHANNA TOWNSHIP SUPERVISORS

220 FIFTH STREET  
SALTSBURG, PA 15681  
Phone: 724 639-3417 Fax: 724 639-3582

November 4, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate — Loyalhanna Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Loyalhanna, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Loyalhanna:

- I. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (— 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Kenneth Walters

Position/Department: Chairman  
Board of Supervisors

Phone Number: 724-433-3981

Email Address: LoyalhannaTwp@comcast.net

Alternate/Secondary POC: Robert McKnight

Position/Department: Township Supervisor

Phone Number: 724-668-8843

Email Address: LoyalhannaTwp@comcast.net

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Mary L. Trunzo

Position/Department: Secretary-Treasurer

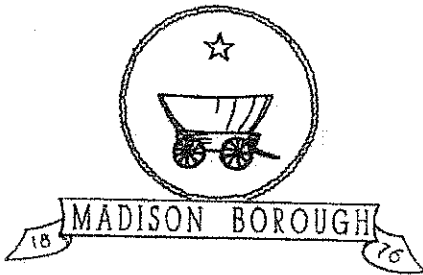
Phone Number: 724-639-3417

Email Address: twpsec@comcast.net

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

Kenneth B. Walters  
Chairman, Board of Supervisors



Madison, Pennsylvania 15663

November 18, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Dept. of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate  
Madison Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Borough of Madison is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update Project. By way of this letter, the Borough of Madison:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation , specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

Identify municipal representatives to serve as the planning point of contacts below. These people will be responsible for representing their community and assuring that these participation expectations are met by the community.

Support the working group selected to oversee the development of this plan.

Provide representation at municipal Planning Committee meetings.

Provide data and information about our community as requested by the Working Group or the contract consultant information, including:

- Structure & facility inventory data
- Identification of new development and anticipated development
- Identification of natural hazard risk areas
- Identification of natural hazard events and losses in the last five years
- Identification of plans, studies, reports & ordinances addressing natural hazard risk
- Identify mitigation activity in the last five years including progress on
- Previously identified mitigation actions

Support public outreach effort in our community which may include:

- Providing notices of the planning project to proper designee
- Providing notice of project, availability of Plan documents and notice of
- Public meetings via available local media
- Advertising and supporting public meetings in our area
- Supporting outreach to NFIP Repetitive Loss & Severe Repetitive Loss
- Property owners in our community

Assist with identification of stakeholders within our community that should be informed and involved with the planning process.

Completing data and information collection survey forms in a timely manner

Identify specific mitigation actions to address each natural hazard posing significant risk to our community.

Involve local NFIP Floodplain Administrator in planning process (N/A not in flood plain area).

Review draft Plan sections when requested and provide comment and input as appropriate.

Adopt the Plan by resolution of our governing body after FEMA conditional approval.

Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on planning process.

3. Assigns the following persons to be Points of Contacts for our jurisdiction. We understand that these POCs are responsible for assuring our representation at municipal Planning Committee meetings and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: To be determined\*

Phone Number:

Alternate/Secondary POC – To be determined\*

Phone Number:

Email for notices: [madboro@comcast.net](mailto:madboro@comcast.net)

\*Availability of a POC for Madison yet to be determined due to volunteer status of council members who all have full time job responsibilities.

4. Floodplain does not apply to Madison Borough as we do not exist in a floodplain area.
5. Recognizes that failure to meet minimum participation expectations and deadlines, as determined by the Working Group, will result in our municipality being excluded from the planning process.

Respectfully submitted,



Patricia A. Walt, Secretary-Treasurer  
By Direction of Madison Borough Council



Date October 17, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Manor Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of Manor, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Manor:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website



- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Jeremy Dixon                      Position/Department: Emergency Management

Phone Number: 412-612-4599                  Email Address: noxid21@comcast.net

Alternate/Secondary POC: Dawn Lynn                  Position/Department: Council

Phone Number: 215-208-2461                  Email Address: thelstrose@aol.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Ed Howley                      Position/Department: Zoning Officer

Phone Number: 724-864-2525                  Email Address: zoningandcodes@manorborough.com

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Joseph N. Lapia  
Borough Manager

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 12 NOV 13

Municipality/Organization: MANOR BOROUGH

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: JEREMY DIXON

Title/Department: EMERGENCY MANAGEMENT COORDINATOR

Address: 82 OBSERVATORY ST MANOR, PA 15665

Telephone: 412.612.4599

Fax: N/A

E-mail: JEREMY.DIXON@MANORBOROUGH.COM

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: DAWN LYNN

Title/Department: PRESIDENT OF COUNCIL

Address: 19 1/2 Second Street, PO Box 114, MANOR, PA 15665

Telephone: (215) 208-2461

Fax: \_\_\_\_\_

E-mail: the1strose@aol.com



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

X E-mail                      \_\_\_\_\_ Regular Mail                      \_\_\_\_\_ Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

LOW RISK AREAS (IN 100 YEAR FLOOD PLAN)

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

NOTE completed + completing drainage improvements within Borough since floods of 2009; re-zoned of certain areas that were identified as problem areas (flooding of 2009); updating + building storm-water retention ponds to reduce flooding within new land developments + sub-divisions within Borough - also included in all new plans of land development plans via Ordinance.

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

RESEARCH ON CONDITION OF FLOODWAYS ± POSSIBLE REMEDIATION/RECURBISHMENT OF THE SAME



# Evaluation of Identified Hazards and Risk

Name: JEREMY DIXON

Title: EMC

Jurisdiction: MANOR BOROUGH

## PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  NC = No Change; I = Increase; D = Decrease  (Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	I	ADDITIONAL POPULATION
Earthquakes	I	" + had 1 in 2012.
Energy Emergencies	I	"
Fire	I	"
Fixed Nuclear Facility	NC	"
Floods	NC	
Hazardous Materials	D	LOCAL SITE REDUCED SIZE/CAPACITY
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	I	had tornado + hail storms do signif icant damage to private property ENER VEGETATION OUTCROPPINGS in 2012.
Transportation Accidents	I	INCREASED FLOW THROUGH
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |   |
|---|---|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input checked="" type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input checked="" type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                                    |
| <input type="checkbox"/> Extreme Temperature                              | <input type="checkbox"/> Volcano                                    |
| <input checked="" type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                                   |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |   |
| <input checked="" type="checkbox"/> Invasive Species                      |   |

#### *Human-Caused*

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                        |
| <input checked="" type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion                      |
| <input type="checkbox"/> Disorientation                            | <input checked="" type="checkbox"/> Utility Interruption      |
| <input checked="" type="checkbox"/> Drowning                       | <input checked="" type="checkbox"/> War and Criminal Activity |
| <input checked="" type="checkbox"/> Environmental Hazards          |   |

**Other Comments:**

[Empty rectangular box for comments]



### Appendix 3: Capability Assessment Survey

Jurisdiction: MANOR BOROUGH Point of Contact Name and Title: JEREMY DIXON / EMC  
 Phone: 412.612.4599 Email: JEREMY.DIXON@MANORBOROUGH.COM

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate its estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan	X	1/1/2009		WESTMORELAND COUNTY EMA	+	+	
Emergency Operations Plan		5/1/2005	X	MANOR BOROUGH	+	+	CURRENTLY IN REVISION FROM BOROUGH PLATE
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	X						



Appendix 3: Capability Assessment Survey

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
	Zoning Regulations	X					
Subdivision Regulations	X			MANOR BOROUGH	+		
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X			MANOR BOROUGH	+		
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	X	5/1/2013		MANOR BOROUGH	+	+	STORMWATER/SEWAGE SEPARATION PROJECT, INCREASES ABILITY TO HANDLE RUNOFF
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	X			MANOR BOROUGH	+		
Fire Code							
Firewise							
Storm Ready	X						
Other							



2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

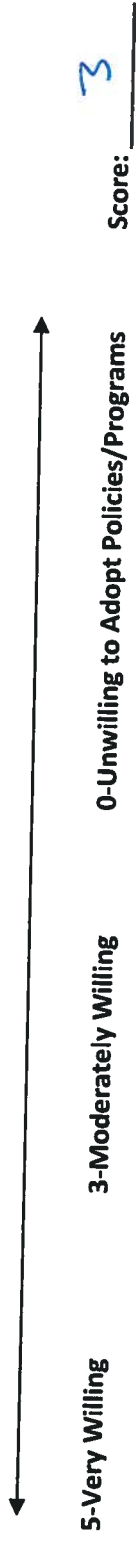
Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	X			
Planners or engineers (with natural and/or human caused hazards knowledge)	X			
Engineers or professionals trained in building and/or infrastructure construction practices (includes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

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources for *hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

7

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming				
Community Development Block Grants (CDBG)	X			
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				

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



Appendix 3: Capability Assessment Survey


5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability	X		
Fiscal Capability		X	
Community Political Capability		X	
Community Resiliency Capability			X





**MEMBERS OF COUNCIL:**  
**LUCILLE D'ALFONSO**  
DIRECTOR OF ACCOUNTS AND  
FINANCE, AND PURCHASING AGENT  
**JONMICHAEL RETOS**  
DIRECTOR OF PUBLIC SAFETY  
**WILLIAM MANUS**  
DIRECTOR OF STREETS AND  
PUBLIC IMPROVEMENTS  
**DR. MARTIN M. DUDAS**  
DIRECTOR OF PARKS AND  
PUBLIC PROPERTY

**MARY JO SMITH**  
**MAYOR**  
DIRECTOR OF PUBLIC AFFAIRS  
  
**CITY OF MONESSEN**  
MONESSEN MUNICIPAL COMPLEX  
1 WENDELL RAMEY LANE, SUITE 400  
MONESSEN, PA 15062  
PHONE 724-684-9712  
FAX 724-684-4006

**GERALD SAKSUN**  
CITY TREASURER  
**WAYNE VLASIC**  
CITY CONTROLLER  
**ROSALIE NICKSICH**  
CITY CLERK  
**JOHN J. HARHAI**  
CITY ADMINISTRATOR  
**MARK J. SHIRE**  
SOLICITOR

Thursday, November 14, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

**Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate - City of Monessen**

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the City of Monessen, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update Project. By way of this letter, the City of Monessen:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on the City's behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgment" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).

- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted the City in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in our community in the last five years, including progress on previously identified mitigation actions
  
- Support public outreach efforts in our community which may include:
  - Providing notices of the planning project on the City's municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in our community
  
- Assist with the identification of stakeholders within our community that should be informed and potentially involved with the planning process.
  
- Completing data and information collection survey forms in a timely manner.
  
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to our community.
  
- Involve our local NFIP Floodplain Administrator in the planning process.
  
- Review draft Plan sections when requested and provide comment and input as appropriate.
  
- Adopt the Plan by resolution of the City's governing body, after FEMA conditional approval.
  
- Periodically Monessen City Council, provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

**Through December 31, 2013**

Primary POC: John Harhai,

Position/Department: City Administrator

Phone Number: (724) 684-9712

Email Address: [jharhai@cityofmonessen.com](mailto:jharhai@cityofmonessen.com)

**On and after January 1, 2014**

Alternate/Secondary POC: Louis Mavrakis

Position/Department: Mayor (as of the 1<sup>st</sup> week of January, 2014)

Phone Number: (724) 684-9712

Email Address: [mayorsoffice@cityofmonessen.com](mailto:mayorsoffice@cityofmonessen.com)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP EPA:

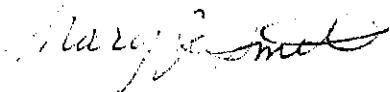
Position/Department: Zoning Officer/Office of Code Enforcement

Phone Number: (724) 684-9717

Email Address: [code@cityofmonessen.com](mailto:code@cityofmonessen.com)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group, will result in our municipality being excluded from the planning process.

Sincerely,



Mary Jo Smith, Mayor

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 11/12/13

Municipality/Organization: City of Monessen

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1 \_\_\_\_\_ Check here if you want access to the project SharePoint site

until 12/31/13

Name: John Harhai

Title/Department: City Administrator

Address: 1 Wendell Ramey Lane <sup>4th Floor</sup> Monessen, PA 15062

Telephone: 724-684-9712

Fax: \_\_\_\_\_

E-mail: johnharhai@cityofmonessen.com

Contact #2 (optional) \_\_\_\_\_ Check here if you want access to the project SharePoint site

after 1/1/14

Name: Lou Mavreki's

Title/Department: Mayor

Address: 1 Wendell Ramey Lane 4th Flr. Monessen PA 15062

Telephone: (724) 684-9712

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail

Regular Mail

Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

flood plain

industrial accident (coke plant to restart (tent 4/14)

earth collapse due to aged drainage system beneath

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

floodplain ordinance

stormwater mgmt ordinance

sewer separation and improvement (DEP-mandated)

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.





# MOUNT PLEASANT TOWNSHIP SUPERVISORS

Westmoreland County  
P.O. Box 158  
208 Poker Road  
Mammoth, Pennsylvania 15664  
Phone: (724) 423-5653

Duane E. Hutter  
Frank A. Puskar  
Jack F. Rutkowski

October 30, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Mount Pleasant Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Mount Pleasant is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Mount Pleasant:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas



- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Duane Hutter

Position/Department: Emergency Coordinator

Phone Number: 724.689.9162 (cell)

Email Address: mptduane@zoominternet.net

Alternate/Secondary POC: Caprice Mills

Position/Department: Twp Secretary-Treasurer

Phone Number: 724.423.5653

Email Address: mptcaprice@zoominternet.net

## **MOUNT PLEASANT TOWNSHIP SUPERVISORS**

Westmoreland County

P.O. Box 158 • 208 Poker Road • Mammoth, Pennsylvania 15664 • Phone: (724) 423-5653

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Caprice Mills

Position/Department: Twp Secretary-Treasurer

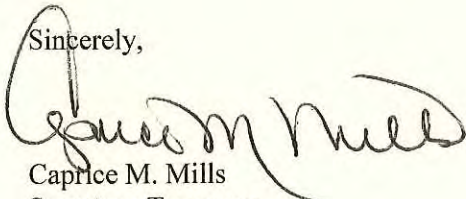
Phone Number: 724.423.5653

Email Address: mptcaprice@zoominternet.net

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Enclosed is a copy of the resolution executed by the supervisors stating such.

Sincerely,



Caprice M. Mills  
Secretary-Treasurer  
Mount Pleasant Township

Enclosure (1)

**MOUNT PLEASANT TOWNSHIP SUPERVISORS**

Westmoreland County

P.O. Box 158 • 208 Poker Road • Mammoth, Pennsylvania 15664 • Phone: (724) 423-5653

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Thursday, November 21, 2013 4:00 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of gerald d. lucia

<b>What Municipality or Organization are you with? *</b>	Mt. Pleasant Borough
<b>Name of Project *</b>	storm water runoff
<b>Existing Issue Requiring the Project *</b>	on heavy storms, flooding
<b>Brief Description of the Project</b>	addition of pipes , and replacement of deteriorated pipes of old pipes that are deteriorating
<b>Cost of the Project</b>	high
<b>Project Location</b>	south and north geary streets
<b>Proposed Start Date of Project</b>	2014-05-06
<b>Proposed Duration of Project (in months)</b>	2014-08-30
<b>Potential Funding Sources</b>	mount pleasant borough
<b>Contact Name *</b>	gerald d. lucia
<b>Email Address *</b>	<a href="mailto:luciasr.jerry@yahoo.com">luciasr.jerry@yahoo.com</a>





# MUNICIPALITY of MURRYSVILLE

4100 Sardis Road • Murrysville, PA 15668  
Phone: (724) 327-2100 • Fax: (724) 327-2881

Robert J. Brooks  
Mayor

James R. Morrison  
Chief Administrator

Council

Joan Kearns  
Council President

Jeffery L. Kepler

Joshua R. Lorenz

David R. Perry

Ron Summerhill

Regis Synan  
Council Vice President

William Vance

October 23, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

SUBJECT: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Murrysville Municipality

Dear Mr. Tantlinger:

Per your letter dated October 11, 2013, the Municipality of Murrysville is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the *Municipality of Murrysville*:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically.

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group of the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas

- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be information and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary of municipal staff and volunteer labor spend on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Jim Morrison  
Phone Number: 724-327-2100  
Alternate/Secondary POC:  
Phone Number:

Position/Department: Chief Administrator  
Email Address: [JMorrison@murrysvillegov.org](mailto:JMorrison@murrysvillegov.org)  
Position/Department:  
Email Address:



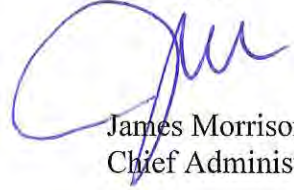
4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Mark Haugh  
Phone Number: 724-327-2100

Position/Department: Engineering Tech  
Email Address: [MHaugh@murrysvillegov.org](mailto:MHaugh@murrysvillegov.org)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



James Morrison  
Chief Administrator



**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 11/15/13

Municipality/Organization: MUNICIPALITY OF MURKESVILLE

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: JIM MORRISON

Title/Department: CHIEF ADMINISTRATOR

Address: 4100 SARDIS RD MURKESVILLE PA 15668

Telephone: 724 327 2100

Fax: 724 327 2881

E-mail: JMORRISON@MURKESVILLEGOV.ORG

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

E-mail                       Regular Mail                       Telephone

**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**



# Evaluation of Identified Hazards and Risk

Name: JIM MORRISON Title: \_\_\_\_\_

Jurisdiction: MURKYSVILLE

## PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	No	
Droughts and Water Supply Deficiencies	"	
Earthquakes	"	
Energy Emergencies	"	
Fire	I	
Fixed Nuclear Facility	"	
Floods	"	
Hazardous Materials	"	
Landslides	"	
Nuclear Attack	"	
Subsidence, Sinkhole	"	
Terrorism	"	
Tornadoes, Hurricanes Wind storms	"	
Transportation Accidents	"	
Winter Storms	"	



## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |   |
|---|---|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input checked="" type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input checked="" type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                                    |
| <input type="checkbox"/> Extreme Temperature                              | <input type="checkbox"/> Volcano                                    |
| <input checked="" type="checkbox"/> Hailstorm                             | <input checked="" type="checkbox"/> Wildfire                        |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |   |
| <input checked="" type="checkbox"/> Invasive Species                      |   |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                   |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion                 |
| <input type="checkbox"/> Disorientation                 | <input checked="" type="checkbox"/> Utility Interruption |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity       |
| <input type="checkbox"/> Environmental Hazards          |  |

**Other Comments:**

[Empty rectangular box for comments]



### Appendix 3: Capability Assessment Survey

Jurisdiction: \_\_\_\_\_ Point of Contact Name and Title: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Email: \_\_\_\_\_

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006	Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan	✓		COUNTY			
Emergency Operations Plan	✓		MEMO			
Disaster Recovery Plan						
Evacuation Plan						
Continuity of Operations Plan						
NFIP	✓		MUNIC			
NFIP – Community Rating System	✓		MUNIC			
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	✓		MUNIC			
Floodplain Management Plan	✓		MUNIC			





Appendix 3: Capability Assessment Survey

Tool / Program	In Place	Status Date Adopted or Updated	Under Development	Dept./Agency Responsible	Effect on Loss Reduction: + Support O Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
Zoning Regulations	✓			MUNIC			
Subdivision Regulations	✓			"			
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	✓			"			
Open Space Management Plan (or Parks/Rec or Greenways Plan)	✓			"			
Stormwater Management Plan / Ordinance	✓			"			
Natural Resource Protection Plan							
Capital Improvement Plan	✓			MUNIC			
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation	✓			MUNIC			
Building Code	✓			"			
Fire Code	✓			"			
Firewise							
Storm Ready							
Other							



2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "x" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	COMMUNITY DEV	
Planners or engineers (with natural and/or human caused hazards knowledge)	<input type="checkbox"/>	<input type="checkbox"/>		
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	COMMUNITY DEV	
Emergency Manager	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ADMINISTRATION	
NFIP Floodplain Administrator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ENGINEERING	
Land Surveyors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	"	
Scientists or staff familiar with the hazards of the community	<input type="checkbox"/>	<input type="checkbox"/>		
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	COMMUNITY DEV	
Grant writers or fiscal staff to handle large/complex grants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ADMINISTRATION	
Staff with expertise or training in Benefit-Cost Analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	"	
Other	<input type="checkbox"/>	<input type="checkbox"/>		





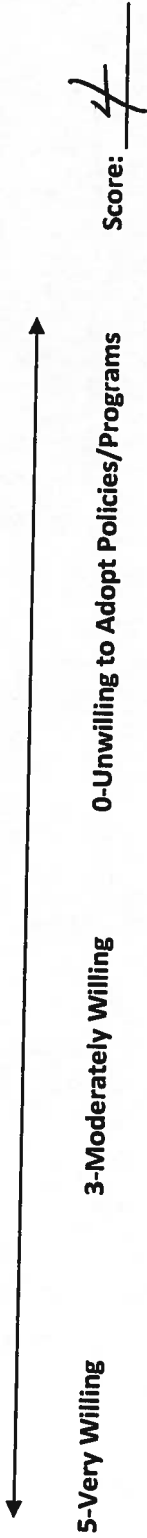
Appendix 3: Capability Assessment Survey

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming	✓		Munic	
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				



4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



Appendix 3: Capability Assessment Survey

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in Appendix 4.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability		X	
Fiscal Capability		X	
Community Political Capability		X	
Community Resiliency Capability		X	





## Mitigation Project Capture Sheet

For the purposes of the 2014 Westmoreland Hazard Mitigation Plan update the Hazard Mitigation Working Group would like to capture any mitigation projects that the municipality is either currently working on or would like to pursue in the. These projects will be documented in the HMP so that mitigation grant funding can be applied for to support project costs. Please complete one sheet per project with as much detail as possible, using the example below and footnotes as a guide.

Please forward completed sheets to:  
Chris Tantlinger, HAZMAT Coordinator  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601  
Phone: 724-600-7349  
Fax: 724-600-7388  
Email: CTANTLIN@co.westmoreland.pa.us

or

Caitlin Kelly, MSEM, MEP  
Tetra Tech EM, Inc.; 240 Continental Drive Suite 200, Newark, DE 19713  
Phone: (302) 283-2218  
Fax: (302) 454.5988  
Email: caitlin.kelly@tetrattech.com

An example completed hazard mitigation project capture sheet and a blank mitigation project capture sheet are provided on the following pages.





## Example: Completed Mitigation Project Capture Sheet

<b>Contact Information:</b>	
<i>Name:</i> Bob Jones <i>Title:</i> Director, Engineering	
<i>Department/Agency:</i> Town Engineering Department	
<i>Telephone:</i> 555-555-1234	
<b>Project Location:</b>	
ABC culvert along Swift River at the intersection of Smith Street and Jones Road in Floodville.	
<b>Project Description</b> <i>(Please include what will be done, what hazards it will mitigate, how it will mitigate those hazards and what losses will be reduced):</i>	
Increase the structural stability and drainage capacity of the culvert along Swift River on Jones Road in Floodville to alleviate stormwater flooding. The increased capacity will prevent excess water from undermining the road and flooding the six residential properties along this street. Jones Road is a main artery through the area and is identified as a critical evacuation and response route.	
<b>Lead Agency:</b> Town Engineering	<b>Support Agencies:</b> Town DPW, Westmoreland County Roads Dep't., NYSOEM
<b>Project Cost:</b> High	<b>Funding Source</b> <i>(if known):</i> FEMA PDM with local Capital Improvements Budget for 25% cost share
<b>Timeline:</b> Short	

**Costs:**

If an estimated cost is known, please provide or use the following ranges:

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

If costs have not been estimated, please use the following:

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.

**Funding Source:**

Please identify the anticipated funding source, which could be "Grant funding with local cost share".

**Timeline:**

Short = 1 to 5 years.

Long Term = 5 years or greater.

OG = On-going program.

DOF = Depending on funding.



## Mitigation Project Capture Sheet

<b>Contact Information:</b> <i>Name:</i> <i>Title:</i> <i>Department/Agency:</i> <i>Telephone:</i>	
<b>Project Location:</b>	
<b>Project Description</b> <i>(Please include what will be done, what hazards it will mitigate, how it will mitigate those hazards and what losses will be reduced:</i>	
<b>Lead Agency:</b>	<b>Support Agencies:</b>
<b>Project Cost:</b>	<b>Funding Source</b> <i>(if known):</i>
<b>Timeline:</b>	

**Costs:**

If an estimated cost is known, please provide or use the following ranges:

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

If costs have not been estimated, please use the following:

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.

**Funding Source:**

Please identify the anticipated funding source, which could be "Grant funding with local cost share".

**Timeline:**

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

Date

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update

Authorization and Letter of Intent to Participate - Municipality Name

*New Alexandria Boro*

Dear Mr. Tantlinger:

*10/13/13 New Alexandria Boro*

Per your letter, dated [\_\_\_\_], the Municipality Name, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Municipality Name:

*New Alexandria Boro*

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)

- Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: *Ron Cramer*

Position/Department: *Emergency Management Co-ordinator*

Phone Number:

Email Address:

Alternate/Secondary POC: *Molly McLaughlin*

Position/Department: *Deputy Emergency Management Co-ordinator*  
*New Alex Boko*

Phone Number:

Email Address:

*724-668-7385*

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:

Position/Department:

Phone Number:

Email Address:

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

*Daratha A. Baker*  
*Mayor Boro New Alexandria*

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date:

NOV, 12, 2013

Municipality/Organization:

New Alexandria BORO

County:

Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):

\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1

Check here if you want access to the project SharePoint site

Name:

Ron CRAMER

Title/Department:

Emergency MANAGER

Address:

104 Pleasant View

Telephone:

724-787-4719

Fax:

E-mail:

NAVFD@hotmail.com

Contact #2 (optional)

Check here if you want access to the project SharePoint site

Name:

Molly McNaughton

Title/Department:

Deputy Emergency MANAGER

Address:

222 Grandview Street

Telephone:

724-668-7385

Fax:

E-mail:

rkmcn@comcast.net





What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail

Regular Mail

Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

Rt 22 - Bad wrecks, fuel spills

Rt 981 - Bad wrecks, fuel spills

Flooding problems from the ~~local~~ <sup>local</sup> hanna  
gas leaks

Storm damage (trees, wires, etc...)

Snow

Brush Fires

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Sewer/storm drain instillation

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

Having meetings and plans to  
address these hazards





### Appendix 3: Capability Assessment Survey

Jurisdiction: **New Alexandria Boro** Point of Contact Name and Title: **Ronald Cramer EMA Director # 22**

Phone: **(724) 787-4719**

Email: **navfd@hotmail.com**

- 1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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			X	Westmd. County/ New Alexandria Boro.	+		Currently underconstruction for 2014
Emergency Operations Plan	X			New Alexandria Boro.	+		
Disaster Recovery Plan							
Evacuation Plan							
Continuity of Operations Plan							
NFIP	X				+		



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				
NFIP – Community Rating System							
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)							
Floodplain Management Plan							
Zoning Regulations	X			New Alexandria Boro.	+		
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)							
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance			X	New Alexandria Boro.	+		
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	X			New	+		



Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
				<b>Alexandria Boro.</b>			
Fire Code							
Firewise							
Storm Ready							
Other							

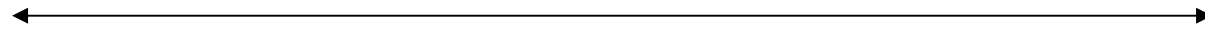
**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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)				
Emergency Manager	X		EMA Director New Alex. Boro.	
NFIP Floodplain Administrator	X		EMA Director New Alex. Boro.	
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	X		Westmoreland County GIS	
Grant writers or fiscal staff to handle large/complex grants				
Staff with expertise or training in Benefit-Cost Analysis				
Other				

- 3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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	X		MWAC & Derry Twp Municipal	
Stormwater Utility Fees				
Development Impact Fees				
General Obligation, Revenue, and/or Special Tax Bonds				
Partnering Arrangements or Intergovernmental Agreements				
Other				

**4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction’s political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score:   3**



- 5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability	X		
Fiscal Capability	X		
Community Political Capability	X		
Community Resiliency Capability	X		

THOMAS D. GUZZO  
MAYOR

TODD MENTECKI  
ACCOUNTS AND FINANCE

TIMOTHY D. DIMAIO  
PUBLIC WORKS DEPARTMENT

JOHN W. REGOLI, JR.  
PUBLIC SAFETY

DOUGLAS J. AFTANAS  
PARKS AND BUILDINGS

DENNIS F. SCARPINITI, Esq., CMC  
CERTIFIED MUNICIPAL CLERK



## City of New Kensington

301 ELEVENTH STREET  
NEW KENSINGTON, PA 15068  
(724) 337-4523 • FAX: (724) 337-6911  
www.newkensingtononline.com

JOHN S. ZAVADAK  
CITY CONTROLLER

JAMES C. MOORE  
CITY TREASURER

ANTHONY J. VIGILANTE, Esq.  
CITY SOLICITOR

ANTHONY J. MALES, P.E.  
CITY ENGINEER

THOMAS W. KLAWINSKI  
CHIEF OF POLICE

J. EDWARD SALIBA  
FIRE CHIEF

October 18, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg PA 15601

**RE:** *Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – City of New Kensington*

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the City of New Kensington is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the City of New Kensington:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the Minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Three meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).

- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
  
  - Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: **Dennis F. Scarpiniti**      Position/Department: **City Clerk**

Phone Number: **724-337-3342**      Email Address: **cityclerk@newkensingtons.org**

Alternate/Secondary POC: **Kyle Freiberg**      Position/Department: **Emergency Mgmt Coordinator**

Phone Number: **724-339-9695**      Email Address: **kwfreiberg@comcast.net**

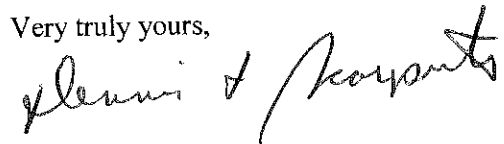
4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: **Anthony Males**      Position/Department: **City Engineer**

Phone Number: **724-339-2000**      Email Address: **alphaengineering@verizon.net**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Very truly yours,



Dennis F. Scarpiniti, Esq., CMC  
Certified Municipal Clerk

DFS/lmh



*Borough of*  
*New Stanton, Pennsylvania*

Phone: 724-925-9700

Fax: 724-925-2709

E-mail: [borooffice@newstanton.org](mailto:borooffice@newstanton.org)



451 North Center Avenue  
New Stanton, Pennsylvania 15672

March 18, 2014

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate - New Stanton Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Borough of New Stanton is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of New Stanton:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:
  - Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.
  - Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
  - Support the Working Group selected to oversee the development of this plan.
  - Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
  - Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
    - o Structure and facility inventory data
    - o Identification of new development and anticipated development
    - o Identification of natural hazard risk areas
    - o Identification of natural hazard events and losses that have impacted your community in the last five years
    - o Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - o Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Robert Coletta

Position/Department: Director, Emergency Mgmt.

Phone Number: 724-771-0010

Email Address: boocoletta@hotmail.com

Alternate/Secondary POC: John Storey, Jr.

Position/Department: Deputy Director, Emergency Mgmt.

Phone Number: 724-244-0731

Email Address: jstorey@comcast.net

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Melvin Steele

Position/Department: Public Works Director/  
Zoning Officer

Phone Number: 724-331-1431

Email Address: melvin.steele@comcast.net



5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sistek", with a large, sweeping flourish extending to the left.

Scott Sistek  
Council President

**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions):  
**Caitlin Kelly Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713**  
**(302) 283-2218 Fax: (302) 454-5988**  
**E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)**

**Date:** April 3, 2014

**Municipality/Organization:** New Stanton Borough

**County:** Westmoreland

**Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):**  
**\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\***

**Contact #1**   X   **Check here if you want access to the project SharePoint site**

**Name:** Melvin Steele

**Title/Department:** Public Works Supervisor, Zoning Officer & Flood Plain Administrator

**Address:** New Stanton Borough, 451 North Center Ave., New Stanton, PA 15672

**Telephone:** 724-331-1431

**Fax:** 724-925-2709

**E-mail:** melvin.steele@comcast.net

**Contact #2 (optional)**   X   **Check here if you want access to the project SharePoint site**

**Name:** Emil A. Bove

**Title/Department:** Bove Engineering Company/Borough Engineer

**Address:** 8201 Route 819, Greensburg, PA 15601

**Telephone:** 724-925-9269

**Fax:** 724-925-1216

**E-mail:** eboveengineering@comcast.net



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

  X   E-mail                                 Regular Mail                                 Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

- 1) Flooding
  - a) Sewickley Creek - Property damage at Borough park and mobile home parks near Cracker Barrel Restaurant.
  - b) Wilson Run - Minor property damage.
  - c) Belson Run - Minor property damage.
- 2) Truck Accidents - several with injuries
  - a) SR 0070; b) SR 3091; c) SR 0119; d) Turnpike; and e) Amos K. Hutchinson Bypass
- 3) Railroad Accidents
- 4) Environmental Hazards
  - a) Supervalve ammonia leak which caused evacuations.
- 5) Winter Storms
  - a) Road closures; b) Roof collapses; and c) Power failures due to falling trees and branches.
- 6) Utility Failures
  - a) Power Failures - Falling trees and branches, traffic accidents.
  - b) Gasline Leaks - Several evacuations from leaks.
  - c) Waterline Breaks - SR 0070 flooded due to break.
- 7) Flash Floods - Catch basins & culverts overloaded causing road closures and minor property damage.

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

- 1.a) Mobile homes have been removed from Sewickley Creek Floodway. Several are still in the 100-year flood plain.
- 6.a) There has been talk of the purchase of a portable emergency generator capable of powering the Fire Hall, Public Works/Borough Building or where needed, such as a traffic signal intersection. This could be shared by adjacent municipalities (Hunker, Youngwood, Mt. Pleasant).

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

- 4.a) Warning system for facilities that use/store hazardous materials.
- 6.a.b & c) Upgrading above and below ground utility facilities.



## Evaluation of Identified Hazards and Risk

Name: Melvin Steele

Title: Public Works Director, Zoning Officer,  
and Flood Plain Administrator

Jurisdiction: New Stanton Borough

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	I	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	I	
Transportation Accidents	I	
Winter Storms	I	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |  |
|---|--|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike      |
| <input type="checkbox"/> Coastal Erosion                                  | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                         |
| <input checked="" type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input checked="" type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input checked="" type="checkbox"/> Invasive Species                      |  |

#### *Human-Caused*

- |   |   |
|---|---|
| <input type="checkbox"/> Building or Structure Collapse   | <input type="checkbox"/> Levee Failure                        |
| <input type="checkbox"/> Civil Disturbance                | <input type="checkbox"/> Urban Explosion                      |
| <input type="checkbox"/> Disorientation                   | <input checked="" type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                         | <input checked="" type="checkbox"/> War and Criminal Activity |
| <input checked="" type="checkbox"/> Environmental Hazards |   |

**Other Comments:**

[Empty rectangular box for comments]





### Appendix 3: Capability Assessment Survey

Melvin Steele – Public Works Director,

Jurisdiction: New Stanton Borough

Point of Contact Name and Title: Zoning Officer and Flood Plain Administrator

Phone: 724-925-9700

Email: borooffice@newstanton.org

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	In Place	Date Adopted or Updated	Under Development	Dept./Agency Responsible	Effect on Loss Reduction:			Change Since Last Plan:	Comments
					+ Support	0 Neutral	- Hinder		
<i>EXAMPLE: Hazard Mitigation Plan</i>	<i>X</i>	<i>4/1/2006</i>		<i>Hazard County EMA</i>	<i>+</i>			<i>+</i>	<i>Incorporated in 2010 revised mitigation strategy; completion one action.</i>
Hazard Mitigation Plan	X	10/2006		Public Works Dept.	+			+	
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)	X	2/2011		Council	+			+	
Floodplain Management Plan									



Appendix 3: Capability Assessment Survey

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction:	Change Since Last Plan:	Comments
	In Place	Date Adopted or Updated	Under Development				
Zoning Regulations	X	9/2007		Zoning Officer	+	+	
Subdivision Regulations	X	9/2002		Planning Commission	+	+	
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X		X	Council	+	+	
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	X	3/2004		Council	+	+	
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	X	9/2004		Building Inspector	+	+	
Fire Code	X	1/2001		Building Inspector	+	+	
Firewise							
Storm Ready							
Other							



**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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)	X		Borough Engineer	
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		Borough Engineer Building Inspector	
Emergency Manager				
NFIP Floodplain Administrator	X		Zoning Officer	
Land Surveyors	X		Borough Engineer	
Scientists or staff familiar with the hazards of the community	X		Public Works Department	
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program	X		Borough Engineer	
Grant writers or fiscal staff to handle large/complex grants		X		
Staff with expertise or training in Benefit-Cost Analysis		X		
Other				



**3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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



**4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score: 4**



**5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4.**

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability		X	
Fiscal Capability		X	
Community Political Capability		X	
Community Resiliency Capability		X	





# Borough of North Belle Vernon

503 Speer Street  
North Belle Vernon, PA 15012-1540

Phone: 724-929-6930  
FAX: 724-930-0190

## *Office of Code and Ordinance Enforcement*

John E. Garber Code Enforcement Officer

Phone: 724-880-8159

October 28, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent – North Belle Vernon Borough

Dear Mr. Tantlinger;

Per your letter, dated October 11, 2013 the Borough of North Belle Vernon is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Updating project. By way of this letter, the Borough of North Belle Vernon:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”) to guide and direct this planning process, perform certain parts of the planning process and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.

- Provide representation at the municipal Planning Committee meetings (+/- 3 meetings over 6-9, months including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant including:
  1. Structure and facility inventory data
  2. Identification of new development and anticipated development
  3. Identification of natural hazard risk areas
  4. Identification of natural hazard events and losses that have impacted your community in the last five years
  5. Identification of plans, studies, reports and ordinances addressing natural hazard risk
  6. Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  1. Providing notices of the planning project on your municipal website with links to a County project website
  2. Providing notice of the planning project, the availability of Plan documents, and the notice of public meetings via available media (e.g. newsletters, flyers, email blasts, social media, etc.)
  3. Advertising and supporting public meetings in your area
  4. Supporting outreach to NFIP Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant {or high or medium} risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above are met.

*Primary POC:* John E. Garber      *Position/Department:* Code Enforcement Officer/  
Office of Code and Ordinance Enforcement  
*Position/Department:* Deputy Emergency  
Management Coordinator/Office of Emergency  
Management  
*Position/Department:* Assistant Fire Chief/  
North Belle Vernon Fire Department

*Phone Number:* 724-880-8159      *Email Address:* [chiefbennyjk@aol.com](mailto:chiefbennyjk@aol.com)

*Alternate POC:* Ken R. Ramsdell      *Position/Department:* Fire Chief/  
North Belle Vernon Fire Department

*Phone Number:* 724-747-5425      *Email Address:* [chief80nbvfd@hotmail.com](mailto:chief80nbvfd@hotmail.com)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

*Name of NFIP FPA:* John E. Garber      *Position/Department:* Zoning Administrator

*Phone Number:* 724-880-8159      *Email Address:* [chiefbemyjk@aol.com](mailto:chiefbemyjk@aol.com)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Dennis R. Simboli, President  
Council of the Borough of North Belle Vernon

**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 11-12-2013

Municipality/Organization: NORTH BELLE VERNON BOROUGH

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: JOHN E. GARBER

Title/Department: EMA DEPUTY #26 / PUBLIC SAFETY

Address: 940 WASHINGTON RD. BELLE VERNON, PA 15012

Telephone: 724-880-8159

Fax: 724-930-0190

E-mail: CHIEFBENNYJK@AOL.COM

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: KEN R. RAMSDALE

Title/Department: FIRE CHIEF / PUBLIC SAFETY

Address: 535 GRAHAM ST. BELLE VERNON, PA 15012

Telephone: 724-747-5425

Fax: 724-930-0190

E-mail: CHIEF80NBVFD@HOTMAIL.COM



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail

Regular Mail

Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

SINKHOLES & SUBSIDENCE

WINTER STORM RECOVERY

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

- DRAINAGE IMPROVEMENTS INITIATED IN 1999 ARE 95% COMPLETE & MINOR (CONCENTRATED AREAS) BEING IMPROVED FROM ORIGINAL PLANS.
- IDENTIFICATION OF FLOOD PLAIN AREA IS UPDATED TO NFIP

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.



# NORTH HUNTINGDON TOWNSHIP



North Huntingdon Township • 11279 Center Highway • North Huntingdon, PA 15642  
(724) 863-3806 • Fax (724) 863-9568 • [www.nhtpa.us](http://www.nhtpa.us)

November 12, 2013

## Board of Commissioners

Lee D. Moffatt  
*President*

Zachary J. Haigis  
*Vice President*

Donald F. Austin

Richard G. Gray

David E. Herold

Tony Martino

Brian E. West

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – North Huntingdon Township

John M. Shepherd  
*Township Manager*

Dear Mr. Tantlinger:

Per your letter, North Huntingdon Township is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, North Huntingdon Township:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory date
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years



- Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Point of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Gene Komondor

Position/Department: Emergency  
Management Coordinator

Phone Number: 724-864-3172

Email Address: [emc@nhtpa.us](mailto:emc@nhtpa.us)

Alternate/Secondary POC: John Shepherd

Position/Department: Township  
Manager

Phone Number: 724-863-3806

Email Address: [jshepherd@nhtpa.us](mailto:jshepherd@nhtpa.us)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Ryan Fonzi

Position/Department: Associate  
Planning Director

Phone Number: 724-863-3806

Email Address: [rfonzi@nhtpa.us](mailto:rfonzi@nhtpa.us)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

A handwritten signature in blue ink that reads "John M. Shepherd". The signature is written in a cursive style with a large, looping initial "J".

John M. Shepherd  
Township Manager  
North Huntingdon Township



***Borough of North Irwin***

Town Hall  
21 Second Street  
North Irwin, PA 15642-3326  
Telephone  
(724) 864-5057

Scott E. Avolio, Esquire  
William A. Brandstetter, II, Esquire  
Michael T. Kornis, Esquire- *of counsel*

November 15, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – North Irwin Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of North Irwin, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of North Irwin:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:  
Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.
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  - Structure and facility inventory data
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  - Identification of natural hazard events and losses that have impacted your community in the last five years
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  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Lucien Bove, PE	Position/Department: Borough Engineer
Phone Number: 724-925-9269	Email Address: boveengineering@comcast.net

Alternate/Secondary POC: Michael T. Korn	Position/Department: Borough Solicitor
Phone Number: 724-472-8097	Email Address: mkorns@mtklegal.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Lucien Bove, PE	Position/Department: Borough Engineer
-----------------------------------	---------------------------------------

Phone Number: 724-925-9269

Email Address: [boveengineering@comcast.net](mailto:boveengineering@comcast.net)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Very truly yours,

Michael T. Kornes Esq.  
North Irwin Borough Solicitor

---

**BOROUGH OF OKLAHOMA**  
**OFFICE OF THE SECRETARY**  
**ALECIA D. SHERBONDY**

October 30<sup>th</sup>, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Oklahoma Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of Oklahoma, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update Project. By way of this letter, the Borough of Oklahoma:

1. Authorizes the Westmoreland County Hazard Mitigation Work Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:  
Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.
  - Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
  - Support the Working Group selected to oversee the development of this plan.

170 Thorn Street  
Apollo, PA 15613

PHONE (724) 567-5727  
FAX (724) 568-3847  
E-MAIL [oklaboro@verizon.net](mailto:oklaboro@verizon.net)  
ESTABLISHED FEBRUARY 26<sup>TH</sup>, 1931

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- Provide representation at municipal Planning Committee meetings (~3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting.)
- Provide data and information about your community as requested by the Working Group or contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development.
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that the POCs are responsible for assuring municipal representation at municipal Planning committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Ronald T. Norton  
Phone Number: 724-567-7124

Position: Council President  
Email: oklaboro@verizon.net

Alternate/Secondary POC: Greg Cecchetti  
Phone Number: 724-339-1190

Position: Borough Solicitor  
Email: glcesq@gmail.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Todd L. Sherbondy  
Phone Number: 724-567-5727

Position: Zoning/Code Enforcement Officer  
Email: oklaboro@verizon.net

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Ronald T. Norton  
Oklahoma Borough Council President

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: November 12, 2013

Municipality/Organization: OKLAHOMA Borough

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Ronald NORTON (ACCIA SHERBONDY)

Title/Department: COUNCIL PRESIDENT (BOROUGH SECRETARY)

Address: 170 THORN ST. APOLLO, PA. 15613

Telephone: 724 567 5727

Fax: 724 568 3847

E-mail: OKLABORO@verizon.net

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: GREG CECCHETTI

Title/Department: Borough Solicitor

Address: 170 THORN ST. APOLLO, PA 15613

Telephone: 724 567 5727

Fax: 724 568 3847

E-mail: OKLABORO@verizon.net



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail       Regular Mail       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

KISKIMINGUS River - flood      LANDSLIDES  
Park facilities      TORNADOES  
WINTER STORMS      {Structurally Dangerous  
FLASH STORMS - LOCAL FLOODING      {Building on highway

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

DRAINAGE IMPROVEMENTS - VERY EARLY STAGES

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

\_\_\_\_\_

## Evaluation of Identified Hazards and Risk

Name: Ronald NORTON

Title: Council President

Jurisdiction: OKLAHOMA Borough

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	I	No Borough Employees

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

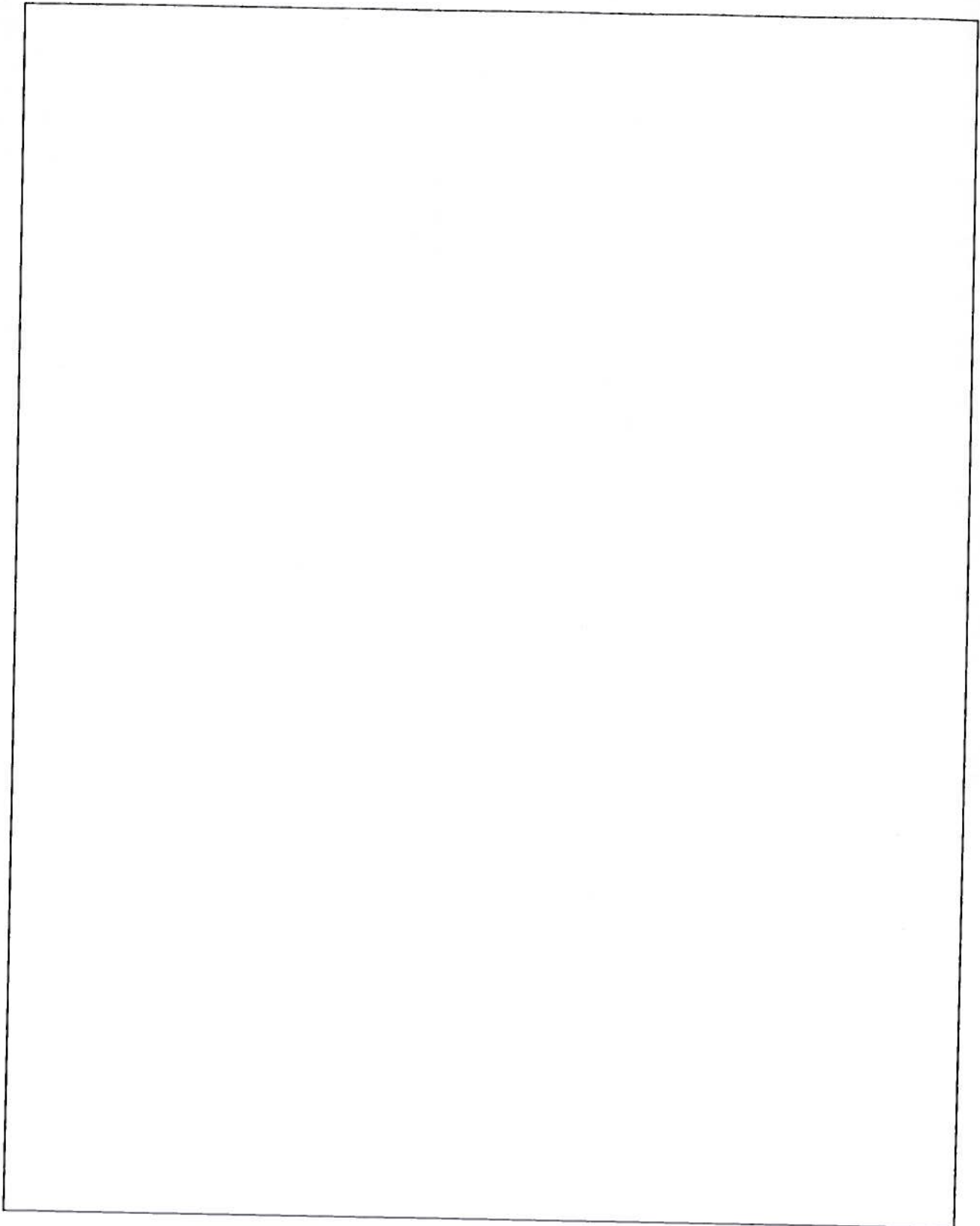
- |  |  |
|--|--|
| <input type="checkbox"/> Avalanche/Glacier                     | <input type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                       | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                      | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                       | <input type="checkbox"/> Tsunami                         |
| <input type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                      |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |



**Other Comments:**



**Appendix 3: Capability Assessment Survey**

Jurisdiction: OKLAHOMA BEAUGH Point of Contact Name and Title: Ronald Naerten - Council President  
 Phone: 224 567 5727 Email: OKLABOARD@verizon.net

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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							



Appendix 3: Capability Assessment Survey

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				
Zoning Regulations	X						
Subdivision Regulations	X						
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)							
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	X						
Fire Code							
Firewise							
Storm Ready							
Other							

Appendix 3: Capability Assessment Survey

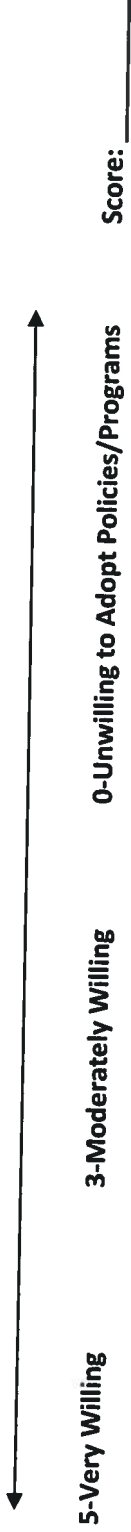
2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.





5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			
Administrative and Technical Capability			
Fiscal Capability			
Community Political Capability			
Community Resiliency Capability			

# PENN TOWNSHIP COMMISSIONERS

TELEPHONE  
724/744-2171

2001 MUNICIPAL COURT  
HARRISON CITY, PENNSYLVANIA 15636

FAX  
724/744-2172

October 22, 2013

Christopher Tantlinger  
HAZMAT Coordinator  
Westmoreland Co. Dept. of Public Safety  
911 Public Safety Road  
Greensburg PA 15601

**RE: Hazard Mitigation Plan Update  
Township of Penn Authorization and Letter of Intent to Participate**

Dear Mr. Tantlinger:

Per your letter dated October 11, 2013 the Township of Penn is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Penn hereby:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group") to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on behalf of the Township.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

To execute and return this "Authorization and Acknowledgement" letter to Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify Penn Township representatives to serve as the planning point of contacts (POC) as shown below. These individuals will be responsible for representing Penn Township and assuring that these participation expectations are met by the Township.
- Supporting the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (3 meetings over a 6 to 9 month period,) including a Kick-Off meeting and a Mitigation Strategy Workshop meeting.
- Provide data and information about Penn Township as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development

- Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted Penn Township in the last five years
  - Identification of plans, studies, reports, and ordinances addressing natural hazard risk
  - Identify mitigation activity in Penn Township in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in Penn Township which may include:
    - Providing notices of the planning project on Penn Township’s municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notices of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within Penn Township that should be informed and potentially involved with the planning process.
  - Completing data and information collections survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing signification (or high or medium) risk to Penn Township.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by Resolution of the Township of Penn after FEMA issues conditional approval.
  - Periodically provide the Working Group with a summary of municipal staff and volunteer labor spent on the planning process.
3. Assigns the following individuals to be the points of contact for Penn Township. Penn understands that these POCs are responsible for assuring Penn’s representation at municipal Planning Committee meetings and assuring that the other minimum requirements of Penn Township’s participation as detailed in the Planning Partner Expectations above are met.

Primary POC:        Bruce R. Light        Position        Secretary / Manager

Phone Number:     724-744-2171 x 201    email address:    [brucelight@penntwp.org](mailto:brucelight@penntwp.org)

Alternate POC: George Adamson Position Emergency Mgt. Coordinator  
Phone Number 724-610-1911 email address: [gadam12@penntwp.org](mailto:gadam12@penntwp.org)

4. Penn Township's designated Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Primary FPA: Dallas Leonard Position Comm. Development Dir.  
Phone Number 724-744-2171 x 207 email address: [dallasleonard@penntwp.org](mailto:dallasleonard@penntwp.org)  
Alternate FPA: William Roberts Position Engineering Technician  
Phone Number 724-744-2171 x 209 email address: [billroberts@penntwp.org](mailto:billroberts@penntwp.org)

5. Recognizes that failure to meet the minimum participation expectations and deadlines as determined by the Working Group will result in Penn Township being excluded from the planning process.

Sincerely,  
  
Bruce R. Light  
Township Secretary / Manager

Cc: Commissioners  
George Adamson, Emergency Management Coordinator  
Dallas Leonard, Director of Community Development  
William Roberts, Engineering Technician

**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 7/26/2014

Municipality/Organization: Penn Township

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Robert Boswell

Title/Department: Emergency Management Coordinator

Address: 2001 Municipal Court, Harrison City PA 15665

Telephone: Office – 724-744-2171 ext:215 Cell - 724-709-4127

Fax: 724-744-2172

E-mail: rboswell@penntwp.org

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Alex Graziani

Title/Department: Township Manager/Secretary

Address: 2001 Municipal Ct, Harrison City PA 15665

Telephone: 724-744-2171 ext:201

Fax: 724-744-2172



E-mail: alexgraziani@penntwp.org\_\_\_\_\_

**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

  X   E-mail                      \_\_\_\_\_ Regular Mail                      \_\_\_\_\_ Telephone





**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

**Flood, Lightning, Tornado/Wind, Winter Storm, Structural Fire, Transportation Accidents**

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

**On the 2 dams that are located in the township, both have their own emergency action plan and are monitored during major rain incidents. Drainage improvements occur when an issue is found. Numerous planning occurs on a yearly basis to better prepare the township for disasters. Raised new building above flood level. Also increased community awareness.**

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**

**Developing emergency action plans for the different hazards the township incurs. Also working on more mitigation problems in the township yearly.**





### Appendix 3: Capability Assessment Survey

Jurisdiction: Penn Township

Point of Contact Name and Title: Robert Boswell

Phone: 724-744-2171 ext:215

Email: rboswell@penntwp.org

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate its estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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			X				<b>In Process</b>
Emergency Operations Plan	X	06/11/14		Penn Twp EMA	+	+	
Disaster Recovery Plan			X				<b>In Process</b>
Evacuation Plan			X				<b>In Process</b>
Continuity of Operations Plan			X				<b>In Process</b>
NFIP	X			Code Enforcement	+	+	Raises new buildings above flood level
NFIP – Community Rating System	X			Code Enforcement	+	+	Increases community awareness
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	X	01/17/11		Code Enforcement	+	+	

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				
Floodplain Management Plan	X			FEMA	+	+	
Zoning Regulations	X	02/21/11		Code Enforcement	O		
Subdivision Regulations	X	03/15/06		Code Enforcement	O		
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	02/02/06		Code Enforcement	O		No effects on hazard mitigation update 2014
Open Space Management Plan (or Parks/Rec or Greenways Plan)	X	06/01/02		Code Enforcement	O		
Stormwater Management Plan / Ordinance	X	03/21/05		Code Enforcement	+	+	Runoff may have been reduced
Natural Resource Protection Plan							
Capital Improvement Plan			X	Admin	O		No Capital Budget for EMS
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation	X	04/26/06		Code Enforcement	O		No effect on Hazard Mitigation
Building Code	X	05/17/04		Code Enforcement	O		No effect on Hazard Mitigation
Fire Code							
Firewise			X	NFPA			
Storm Ready			X	Penn Twp EMA			Storm response in EOP. Continuing planning
Other							

2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	X		Penn Twp Community Development Dept	AICP Planner on staff
Planners or engineers (with natural and/or human caused hazards knowledge)	X		Penn Twp Community Development Dept & Engineers	EADS Group Engineers
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		Penn Twp Community Development Dept & Engineers	Three (3) State certified building inspectors on Staff
Emergency Manager	X		Penn Township Emergency Management	Robert Boswell - Appointed
NFIP Floodplain Administrator	X		Penn Township Community Development Dept	
Land Surveyors		X		
Scientists or staff familiar with the hazards of the community	X			Staff & Engineers know problem/Hazard locations
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA’s HAZUS program		X		
Grant writers or fiscal staff to handle large/complex grants	X		Penn Township Administration	Administration staff handles grant applications
Staff with expertise or training in Benefit-Cost Analysis				
Other				

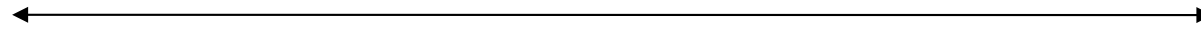
3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming	X		Administration	Penn Twp has C.I.P. Budget & C.D.B.G. Programs but neither relate to hazard mitigation.
Community Development Block Grants (CDBG)	X		Penn Township Community Development	Penn Twp has C.I.P. Budget & C.D.B.G. Programs but neither relate to hazard mitigation.
Special Purpose Taxes		X		
Gas / Electric Utility Fees		X		
Water/ Sewer Fees	X		Penn Township Sewage Authority	Only sewage, no water
Stormwater Utility Fees		X		
Development Impact Fees	X		Penn Township Community Development	Penn Township has traffic & Recreation impact fees but neither relate to Hazard Mitigation
General Obligation, Revenue, and/or Special Tax Bonds	X		Administration	Not for Hazard Mitigation
Partnering Arrangements or Intergovernmental Agreements	X		Administration	Intergovernmental for Recreation. Mutual Aid for Fire/EMS/Police/EMA
Other				

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital



improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score: \_\_\_\_\_4\_\_\_\_\_**

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability		X	
Fiscal Capability	X		
Community Political Capability		X	
Community Resiliency Capability			X

### Appendix 3: Capability Assessment Survey

Jurisdiction: Penn Township

Point of Contact Name and Title: Bruce Light, Secretary/Manager

Phone: 724-744-2171 x 201

Email: brucelight@penntwp.org

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 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	x	2/17/03	x	EMA	+	+	
Disaster Recovery Plan							
Evacuation Plan	x	11/16/09		Engineer	0	none	Berlin Dam
Continuity of Operations Plan							
NFIP	x	1/17/11		Code Enf.	+	+	Penn Twp. has been rated by NFIP
NFIP – Community Rating System							Penn DOES NOT participate.
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)							
Floodplain Management Plan	x	1/17/11		Code Enf.	+	+	



Tool / Program	In Place	Status		Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
		Date Adopted or Updated	Under Development				
Zoning Regulations	x	continual	x	Code Enf.	0		
Subdivision Regulations	x	5/15/06		Code Enf.	0		
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	x	2/2/06		Code Enf.	0		
Open Space Management Plan (or Parks/Rec or Greenways Plan)	x	9/10/99		Code Enf.	+		
Stormwater Management Plan / Ordinance	x	3/21/05		Code Enf.	+		
Natural Resource Protection Plan							
Capital Improvement Plan	x	annually		Administration	0		
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation	x	6/12/13		Administration	0		reviewed every 7 years
Building Code	x	7/17/04		Code Enf.	0		
Fire Code	x	7/15/04		Code Enf.	0		
Firewise							
Storm Ready							
Other							

**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	x		Code Enf. & Engineering	
Planners or engineers (with natural and/or human caused hazards knowledge)		x		
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	x		Engineering & Code Enf.	
Emergency Manager	x		EMA	
NFIP Floodplain Administrator	x		Code Enf.	
Land Surveyors		x		
Scientists or staff familiar with the hazards of the community	x		Code Enf., police, public works, engineering	
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program		x		
Grant writers or fiscal staff to handle large/complex grants	x		Administration	
Staff with expertise or training in Benefit-Cost Analysis		x		
Other		x		

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming	x		Finance Dept.	
Community Development Block Grants (CDBG)	x		Admin. & Code Enf.	
Special Purpose Taxes	x		Finance Dept.	
Gas / Electric Utility Fees		x		
Water / Sewer Fees		x		
Stormwater Utility Fees		x		
Development Impact Fees	x		Code Enf.	
General Obligation, Revenue, and/or Special Tax Bonds	x		Finance Dept.	
Partnering Arrangements or Intergovernmental Agreements	x		Administration	
Other		x		



4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



5-Very Willing

3-Moderately Willing

0-Unwilling to Adopt Policies/Programs

Score: 3

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			X
Administrative and Technical Capability			X
Fiscal Capability		X	
Community Political Capability	X		
Community Resiliency Capability	no clue how to gauge community resiliency or what it means.		

# TOWNSHIP OF ROSTRAVER

## Board of Commissioners



### Board of Commissioners

ANDREW S. TEMOSHENKA  
President

PATRICK G. EGROS  
Vice President

GARY N. BECK, SR.

DONALD BOTTMAN

BRIAN L. SOKOL



**Municipal Building**  
201 Municipal Drive  
Belle Vernon, PA 15012  
(724) 929-8877 • Fax: (724) 929-5009  
www.rostraver.us  
e-mail: commissioners@rostraver.us

PAMELA S. BEARD  
Secretary

ELAINE M. PHILLIPS  
Treasurer/Tax Collector

ALBERT GAUDIO  
Solicitor

CHESTER ENGINEERS  
Engineers

November 15, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Township of Rostraver

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Township of Rostraver, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the *Township of Rostraver*:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, Perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.

- Support the Working Group selected to oversee the development of this plan.
  - Provide representation at municipal Planning Committee meetings.
  - Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
    - Structure and facilitate inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
  - Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazard posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC:  
**Ronald Olschon**

Position/Department:  
**Emergency Management Coordinator**

Phone Number:  
**(724)350-6209/(724)872-8788**

Email Address:  
[olschon@verizon.net](mailto:olschon@verizon.net)

Alternate/Secondary POC:  
**Andrew S. Temoshenka**

Position/Department:  
**Chairman, Board of Commissioners**

Phone Number:  
**(724)322-0419**

Email Address:  
[andy.temoshenka@yahoo.com](mailto:andy.temoshenka@yahoo.com)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:  
**Robert A. Lohr**

Position/Department:  
**Zoning Officer**

Phone Number:  
**(724)929-8877**

Email Address:  
[zoning@rostraver.us](mailto:zoning@rostraver.us)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

BOARD OF COMMISSIONERS  
TOWNSHIP OF ROSTRAVER



Andrew S. Temoshenka  
Chairman of Public Safety

AST/psb

Cc: Rostraver Township Board of Commissioners  
Ronald Olschon  
Robert A. Lohr  
Solicitor Gaudio



**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 11-12-2013

Municipality/Organization: ROSTRAVER TWP.

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: RONALD OLSCHON

Title/Department: E.M.C.

Address: 118 SPRUCE LANE, WEST NEWTON, PA. 15089

Telephone: 724-350-6209 - 724-872-8788

Fax: 724-872-2824

E-mail: OLSCHON@VERIZON.NET

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_





What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail

Regular Mail

Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

FLOODING to several Homes IN SAME AREA  
of Twp. over the LAST 5 YEARS.

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.



## Evaluation of Identified Hazards and Risk

Name: Kristina Clark

Title: Secretary

Jurisdiction: St. Clair Township

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |   |
|---|---|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input checked="" type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input type="checkbox"/> Radon Exposure                             |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                                    |
| <input type="checkbox"/> Extreme Temperature                              | <input type="checkbox"/> Volcano                                    |
| <input checked="" type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                                   |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |   |
| <input type="checkbox"/> Invasive Species                                 |   |

#### *Human-Caused*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                   |
| <input checked="" type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion                 |
| <input type="checkbox"/> Disorientation                            | <input checked="" type="checkbox"/> Utility Interruption |
| <input checked="" type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity       |
| <input checked="" type="checkbox"/> Environmental Hazards          |  |

**Other Comments:**

[Empty comment box]



### Appendix 3: Capability Assessment Survey

Jurisdiction: St. Clair Township

Point of Contact Name and Title: Kristina Clark/Secretary

Phone: 814-446-5211

Email: StClair522@Comcast.net

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan			X				
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)	X	updated 2-9-11					
Floodplain Management Plan	X	updated 2-9-11					



Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Zoning Regulations							
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)							
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	X	7-14-04					
Fire Code							
Firewise							
Storm Ready							
Other							



**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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)				
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				

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State or Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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				

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



5-Very Willing

3-Moderately Willing

0-Unwilling to Adopt Policies/Programs

Score: \_\_\_\_\_

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			
Administrative and Technical Capability			
Fiscal Capability			
Community Political Capability			
Community Resiliency Capability			





## Mitigation Project Capture Sheet

<b>Contact Information:</b> Name: Kristina Clark Title: Secretary Department/Agency: St. Clair Township Telephone: 814-446-5211	
<b>Project Location:</b> Bridge River Hill br (T-994) over Tubmill Creek	
<b>Project Description</b> (Please include what will be done, what hazards it will mitigate, how it will mitigate those hazards and what losses will be reduced: The rising water has caused deterioration to the bridge This bridge has a very low rating on our bridge inspection report We will need to replace this Bridge	
<b>Lead Agency:</b> St. Clair Township	<b>Support Agencies:</b> none
<b>Project Cost:</b>	<b>Funding Source (if known):</b>
<b>Timeline:</b> Short Term	

### Costs:

If an estimated cost is known, please provide or use the following ranges:

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

If costs have not been estimated, please use the following:

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 reappropriation 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.

### Funding Source:

Please identify the anticipated funding source, which could be "Grant funding with local cost share".

### Timeline:

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



## Mitigation Project Capture Sheet

<b>Contact Information:</b> Name: Kristina Clark Title: Secretary Department/Agency: St. Clair Township Telephone: 814-446-5211	
<b>Project Location:</b> Bridge Sugar Run Rd (R-900) over Sugar Run	
<b>Project Description</b> (Please include what will be done, what hazards it will mitigate, how it will mitigate those hazards and what losses will be reduced): The rising water has caused deterioration to the bridge This bridge has a low rating on our bridge inspection report we will need to replace this bridge	
<b>Lead Agency:</b> St. Clair township	<b>Support Agencies:</b> none
<b>Project Cost:</b>	<b>Funding Source (if known):</b>
<b>Timeline:</b> Long Term	

### Costs:

If an estimated cost is known, please provide or use the following ranges:

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

If costs have not been estimated, please use the following:

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 reappropriation 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.

### Funding Source:

Please identify the anticipated funding source, which could be "Grant funding with local cost share".

### Timeline:

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



# SALEM TOWNSHIP BOARD OF SUPERVISORS

MUNICIPAL BUILDING - 244 CONGRUITY ROAD - GREENSBURG, PA 15601  
TELEPHONE: 724 668 7500 FAX: 724 668 7476 EMAIL: salemtwp@comcast.net

November 12, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

**Re: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate  
Salem Township**

Dear Mr. Tantlinter:

Per your letter, dated October 11, 2013, Salem Township is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, Salem Township

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group") to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinter.

- Identify municipal representatives to serve as the planning point of contacts (PIC), below. These people will be responsible for representing the community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.

# SALEM TOWNSHIP BOARD OF SUPERVISORS

MUNICIPAL BUILDING - 244 CONGRUITY ROAD - GREENSBURG, PA 15601  
TELEPHONE: 724 668 7500 FAX: 724 668 7476 EMAIL: salemtwp@comcast.net

Mr. Christopher Tantlinger  
November 12, 2013

Page Two

- Provide representation at municipal Planning Committee meetings (three meetings over six to nine months, including a Kick Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - \* Structure and facility inventory date
  - \* Identification of new development and anticipated development
  - \* Identification of natural hazard risk areas
  - \* Identification of natural hazard events and losses that have impacted your community in the last five years
  - \* Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - \* Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - \* Providing notices of the planning project on your municipal website with links to a County project website
  - \* Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - \* Advertising and supporting public meetings in your area
  - \* Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

# SALEM TOWNSHIP BOARD OF SUPERVISORS

MUNICIPAL BUILDING - 244 CONGRUITY ROAD - GREENSBURG, PA 15601  
TELEPHONE: 724 668 7500 FAX: 724 668 7476 EMAIL: salemtwp@comcast.net

Mr. Christopher Tantlinger  
November 12, 2013

Page Three

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collecting survey forms in a timely manner
- Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to your community
- Involve your local NFIP Floodplain Administrator in the process
- Review draft Plan sections when requested and provide comment and input as appropriate
- Adopt the Plan by Resolution of their governing body after FEMA conditional approval
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following person to be Points of Contact for our jurisdiction. We understand that these POCS are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC:

  
Phone Number:

724 668 7500

Position/Department:

SALEM TWP. SUPERVISOR  
Email Address:

ROBERT H. ZUNDEL  
CHAIRMAN

RONALD D. MARTZ  
VICE-CHAIRMAN

KERRY JOBE  
SUPERVISOR

LYNN CAIN  
SECRETARY

# SALEM TOWNSHIP BOARD OF SUPERVISORS

MUNICIPAL BUILDING - 244 CONGRUITY ROAD - GREENSBURG, PA 15601  
TELEPHONE: 724 668 7500 FAX: 724 668 7476 EMAIL: salemtwp@comcast.net

Mr. Christopher Tantlinger  
November 12, 2013

Page Four

Alternate/Secondary POC:

*KENNETH TRUMETTA*

Phone Number:

*724 668 7500*

Position/Department

*SALEM TWP SUPERVISOR*

Email Address:

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:

Position/Department:

Phone Number:

Email Address:

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Robert H. Zundel, Chairman  
Salem Township Board of Supervisors

## Evaluation of Identified Hazards and Risk

Name: ROBERT H ZUNDEL Title: SUP

Jurisdiction: SALEM TWP

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  NC = No Change; I = Increase; D = Decrease  (Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)	Additional Comments
Dam Failures	NONE	
Droughts and Water Supply Deficiencies		
Earthquakes	NONE	
Energy Emergencies		
Fire	NC	
Fixed Nuclear Facility	NONE	
Floods	NC	
Hazardous Materials	P	RT 22 CORRIDOR
Landslides	INCREASE	
Nuclear Attack	NONE	
Subsidence, Sinkhole	NC	
Terrorism	NONE	
Tornadoes, Hurricanes Wind storms	INCREASE	
Transportation Accidents	INCREASE	RT 22 CORRIDOR
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |  |  |
|--|--|
| <input type="checkbox"/> Avalanche/Glacier                     | <input checked="" type="checkbox"/> Lighting Strike      |
| <input type="checkbox"/> Coastal Erosion                       | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                      | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                       | <input type="checkbox"/> Tsunami                         |
| <input type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                      |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |

TRAFFIC ON RT 22



### Appendix 3: Capability Assessment Survey

Jurisdiction: SALEM TWP

Point of Contact Name and Title: ROBERT H ZUNDEL

Phone: 724 668 7500

Email: \_\_\_\_\_

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan							
Emergency Operations Plan	X	2004		SALEM TWP			
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							



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				
Zoning Regulations							
Subdivision Regulations	X	2004					
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X	2004					
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	X	2004					
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation	X	1996					
Building Code	X						
Fire Code	X						
Firewise							
Storm Ready	X	2001					
Other							



**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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			
Emergency Manager	X			
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				

3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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				

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction’s political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



5-Very Willing

3-Moderately Willing

0-Unwilling to Adopt Policies/Programs

Score: 3

5. **Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			
Administrative and Technical Capability			X
Fiscal Capability			X
Community Political Capability			
Community Resiliency Capability			





## Borough of Scottsdale

Incorporated February 5, 1874

Angelo M. Pallone  
Borough Manager  
Telephone: 724-887-8220  
E-mail: scottdale.boro@zoominternet.net

10 Mount Pleasant Road  
Scottsdale, Pennsylvania 15083  
Fax: 724-887-0195

November 14, 2013

Mr. Christopher Tantlinger  
Westmoreland County Dept. of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

**RE:** Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate  
Scottsdale Borough

Dear Mr. Tantlinger:

Per your letter dated October 11, 2013, the Borough of Scottsdale is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Scottsdale:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning points of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~3 meetings over 6-9 months, including a Kick-Off meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - o Structure and facility inventory data
  - o Identification of new development and anticipated development
  - o Identification of natural hazard risk areas
  - o Identification of natural hazard events and losses that have impacted your community in the last five (5) years
  - o Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - o Identify mitigation activity in your community in the last five (5) years, including progress on previously identified mitigation actions

Page 2

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POC's are responsible for assuring municipal representation at municipal Planning Committee meetings and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

**Primary POC:** Angelo M. Pallone

**Position:** Borough Manager

**Phone Number:** 724-887-8220

**Email:** [scottsdale.boro@zoominternet.net](mailto:scottsdale.boro@zoominternet.net)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

**NFIP FPA:** Angelo M. Pallone

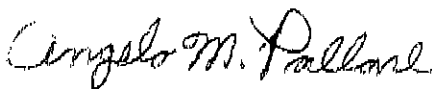
**Position:** Borough Manager

**Phone Number:** 724-887-8220

**Email:** [scottsdale.boro@zoominternet.net](mailto:scottsdale.boro@zoominternet.net)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Angelo M. Pallone  
Borough Manager

AMP/alw

Phone: 724-446-7202

Fax: 724-446-7330

*Sewickley Township Board of Supervisors*  
*2288 Mars Hill Road*  
*Juvin, Pennsylvania 15642*

November 5, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, Pa 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Sewickley Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Sewickley is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Sewickley:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).

- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  1. Structure and facility inventory data
  2. Identification of new development and anticipated development
  3. Identification of natural hazard risk areas
  4. Identification of natural hazard events and losses that have impacted your community in the last five years.
  5. Identification of plans, studies, reports and ordinances addressing natural hazard risk
  6. Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
  
- Support public outreach efforts in your community which may include:
  1. Providing notices of the planning project on your municipal website with links to a County project website.
  2. Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  3. Advertising and supporting public meetings in your area.
  4. Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community.
  
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  
- Completing data and information collection survey forms in a timely manner.
  
- Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to your community.
  
- Involve your local NFIP Floodplain Administrator in the planning process.
  
- Review draft Plan sections when requested and provide comment and input as appropriate.
  
- Adopt a Plan by resolution of their governing body after FEMA conditional approval.
  
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POC's are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC Paul Rupnik, Jr Title: Emergency Management Coordinator 724-989-2703  
Email Address [prupnikjr@gmail.com](mailto:prupnikjr@gmail.com)

Alternate/Secondary POC: Wanda Layman, Title: Supervisor & Township Coordinator  
412-554-8481 Email Address [wlayman@sewickleytownship.org](mailto:wlayman@sewickleytownship.org)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Mike Stack – Title: Zoning Office, Sewage Office, Building Inspector, Flood Plan Administrator & Stormwater Management Administrator. 724-439-7793 Email Address [penninspector1@yahoo.com](mailto:penninspector1@yahoo.com)

5. Sewickley Township recognizes that failure to meet the minimum participation and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely  
SEWICKLEY TOWNSHIP BOARD OF SUPERVISORS

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Saturday, March 15, 2014 11:16 AM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Pinewood Rd. Drainage Project
<b>Existing Issue Requiring the Project *</b>	Narrow road conditions in that area from all the wash out from storms, and with the poor lighting in the area this section of road is very hazardous
<b>Brief Description of the Project</b>	Narrow road conditions in that area from all the wash out from storms, and with the poor lighting in the area this section of road is very hazardous at night for drivers. This Roadway has been repaired many times due to blow outs from the heavy rains and poor drainage area. Also property damage from the poor drainage. Complete storm water drainage system installation. 12 Catch basins 36 lengths of 24" pipe 36 lengths of 18" pipe 2,000 Tons of 2 B Stone Rental of a 160 Excavator 2 months 6 Guys Labor x 2 months
<b>Cost of the Project</b>	\$200,000 - \$225,000
<b>Project Location</b>	Pinewood Road (Overland Dr. to Mars Hill Rd.)
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	2-3
<b>Potential Funding Sources</b>	Sewickley Twp. Road Dept. Budget
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>



**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Saturday, March 15, 2014 11:03 AM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Skid Loader Scrape/Grab attachment
<b>Existing Issue Requiring the Project *</b>	Storm Clean up, culvert clean out
<b>Brief Description of the Project</b>	84" quick scrape and grab skid loader attachment, reinforced grapple bucket for picking up debris. Clean out drainage culverts and clean up storm debris.
<b>Cost of the Project</b>	\$4,500
<b>Project Location</b>	Sewickley Township Road Dept.
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1
<b>Potential Funding Sources</b>	Sewickley Twp. Road Dept. Equipment Budget
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Monday, March 10, 2014 9:16 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Twp. Radio Remote Receive Sites
<b>Existing Issue Requiring the Project *</b>	The township radio system has dead spots due to terrain.
<b>Brief Description of the Project</b>	The twp radio system is in need of remote receive sites to enhance communications. The twp radio system is used during large scale incidents and during peak usage time of the county 911 800 Mhz system. Fire, EMS, EMA, and public works all have 3 common operating channels. Purchase equipment for 3 remote receive sites and install equipment.
<b>Cost of the Project</b>	\$75,000-\$125,000
<b>Project Location</b>	Sewickley Township Emergency Management
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	4-6
<b>Potential Funding Sources</b>	Sewickley Township Emergency Management Budget
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Monday, March 10, 2014 8:58 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Sweeper Truck
<b>Existing Issue Requiring the Project *</b>	Current road sweeper is out of service, too costly to repair
<b>Brief Description of the Project</b>	Purchase of a new roadway sweeper/vacuum truck. Enhancement of storm water management.
<b>Cost of the Project</b>	\$250,000-\$300,000
<b>Project Location</b>	Sewickley Township Road Dept.
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	2-4
<b>Potential Funding Sources</b>	Sewickley Twp. Road Dept. Equipment Budget
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Monday, March 10, 2014 8:33 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Hutchinson VFD Emergency Generator
<b>Existing Issue Requiring the Project *</b>	FD has no emergency back up power
<b>Brief Description of the Project</b>	Purchase and install emergency standby generator
<b>Cost of the Project</b>	\$15000-\$25000
<b>Project Location</b>	Hutchinson VFD Sta 85 261 Fire Hall Ave, Hutchinson,
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	2-3
<b>Potential Funding Sources</b>	
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Monday, March 10, 2014 8:30 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Lowber VFD Emergency Generator
<b>Existing Issue Requiring the Project *</b>	FD has no emergency back up power
<b>Brief Description of the Project</b>	purchase and install emergency standby generator.
<b>Cost of the Project</b>	\$15000-\$25000
<b>Project Location</b>	Lowber VFD Sta 16 22 Cherry St. Lowber
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	2-3
<b>Potential Funding Sources</b>	
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Monday, March 10, 2014 8:26 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	Rillton VFD Generator
<b>Existing Issue Requiring the Project *</b>	FD has no emergency back up power
<b>Brief Description of the Project</b>	Purchase and install emergency standby generator.
<b>Cost of the Project</b>	\$15000-\$25000
<b>Project Location</b>	Rillton VFD Station 14 2567 Mars Hill Rd.
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	60-90 days
<b>Potential Funding Sources</b>	
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>



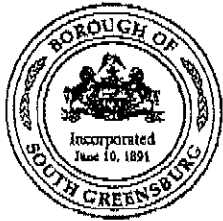
**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Tuesday, March 25, 2014 10:08 AM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul Rupnik Jr.

<b>What Municipality or Organization are you with? *</b>	Sewickley Township
<b>Name of Project *</b>	skid steer attachment
<b>Existing Issue Requiring the Project *</b>	debris build up in culverts
<b>Brief Description of the Project</b>	84" Quick Scrape –n- Grab Attachment for skid steer a reinforced grapple Bucket perfect for picking up debris build up in drainage culverts and for storm clean up
<b>Cost of the Project</b>	\$5,000
<b>Project Location</b>	Sewickley Twp Road Dept
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	1-2
<b>Potential Funding Sources</b>	Sewickley Township Road Dept equipment budget
<b>Contact Name *</b>	Paul Rupnik Jr.
<b>Email Address *</b>	<a href="mailto:emadirector@sewickleytownship.org">emadirector@sewickleytownship.org</a>



# Borough of South Greensburg

[www.southgreensburg.org](http://www.southgreensburg.org)

724-837-8858 • FAX 724-834-5460

**Municipal Building • 1515 Poplar Street • South Greensburg, Pennsylvania 15601-5497**

November 14, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate - Borough of South Greensburg

Dear Mr. Tantlinger:

Per your letter dated October 11, 2013, the Borough of South Greensburg is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the *Borough of South Greensburg*:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - o Structure and facility inventory data
  - o Identification of new development and anticipated development
  - o Identification of natural hazard risk areas
  - o Identification of natural hazard events and losses that have impacted your community in

the last five years

- Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Clentin C. Martin

Position/Department: President of Council

Phone Number: 724-289-3084

Email Address: clentin@comcast.net

Alternate/Secondary POC: Lee Kunkle

Position/Department: Secretary-Treasurer

Phone Number: 724-837-8858

Email Address: leekunkle@southgreensburg.org

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: David L. Todaro

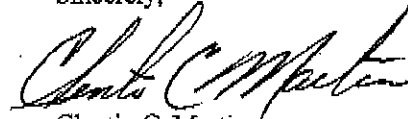
Position/Department: Zoning Officer

Phone Number: 724-331-2625

Email Address: todarod@yahoo.com

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

A handwritten signature in black ink, appearing to read "Clinton C. Martin". The signature is fluid and cursive, with the first name "Clinton" and last name "Martin" clearly distinguishable.

Clinton C. Martin  
President of Council



# Borough of South Greensburg

[www.southgreensburg.org](http://www.southgreensburg.org)

724-837-8858 • FAX 724-834-5460

Municipal Building • 1515 Poplar Street • South Greensburg, Pennsylvania 15601-5497

## FAX COVER SHEET

**FAX NUMBER:** 724-600-7388

**NAME:** Chris Tantlinger, HAZMAT Coordinator/Hazard Mitigation Officer

**FROM:** Lee Kunkle

**SUBJECT:** Letter of Intent to Participate

**DATE:** 11/15/2013

**# OF PAGES:** 4

**ORIGINAL:** Will Not Follow  Will Follow By Mail

**COMMENTS:**

PLEASE CONTACT THE SENDER AT 724-837-8858 IF YOU HAVE ANY QUESTIONS OR PROBLEMS WITH THIS TRANSMISSION. IF WE DO NOT HEAR BACK FROM YOU, WE WILL ASSUME THAT YOU HAVE RECEIVED THE NUMBER OF PAGES LISTED ABOVE AND THAT THEY ARE LEGIBLE.

WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions):  
Caitlin Kelly Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
(302) 283-2218 Fax: (302) 454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 2/26/14

Municipality/Organization: South Huntingdon Twp.

County: WESTMORELAND

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Lawrence J. Nemecek Jr.

Title/Department: Emergency Management Coordinator

Address: 382 Shantz Rd. Ruffsdale, Pa 15679

Telephone: 724-696-1206

Fax: 724-872-3347

E-mail: \_\_\_\_\_

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Richard GATES

Title/Department: Supervisor

Address: 75 Supervisor Dr. West Newton Pa 15089

Telephone: 724-872-8474

Fax: 724-872-3347

E-mail: Southhuntingdon-twp@comcast.net





What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

\_\_\_\_\_ E-mail

\_\_\_\_\_ Regular Mail

\_\_\_\_\_ Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

Flooding along Yough River

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.



# SOUTHWEST GREENSBURG BOROUGH

## Council

JEFF J. TABITA, President  
EARL G. HIGHBERGER, Vice President  
BEVERLY L. ROSSI  
NANCY B. MARSHALL  
JAMES E. SMITH  
WILLIAM J. YOUNG  
RONALD G. HOLTZER



564 Stanton Street  
Southwest Greensburg, Pennsylvania 15601  
(724) 834-0360 FAX (724) 836-3825  
swgreensburg@gmail.com

CORRY H. SHEFFLER  
Secretary - Treasurer

GARY A. FALATOVICH  
Solicitor

MICHAEL A. ROSSI  
Mayor

November 14, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Southwest Greensburg Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Southwest Greensburg Borough is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Southwest Greensburg Borough

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development

- Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Corry H Sheffler

Position/Department: Secretary/Treasurer

Phone Number: 724-834-0360

Email Address: swgreensburg@gmail.com

Alternate/Secondary POC: Todd M Brant

Position/Department: Emergency Mgmt Coord.

Phone Number: 724-217-3285

Email Address: dtbrant24@comcast.net

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Dallas W. Leonard

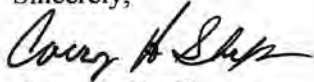
Position/Department: Bldg Code Official/Zoning

Phone Number: 724-392-4474

Email Address:

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

A handwritten signature in black ink, appearing to read "Corry H. Sheffler". The signature is written in a cursive style with a large initial "C".

Corry H. Sheffler  
Secretary/Treasurer



St. Clair Township  
PO Box 506  
Seward, PA 15954  
Telephone: 814-446-5211  
Fax: 814-446-5184

# St. Clair Township

October 28, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate- St. Clair Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of St. Clair, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update Project. By way of this letter, the Township of St. Clair.

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above are met.



October 31, 2013

Page 2

Primary POC: Kristina Clark      Position/Department:

Phone Number: 814-446-5211      Email Address: [stclair522@comcast.net](mailto:stclair522@comcast.net)

Alternate/Secondary POC:      Position/Department:

Phone Number:      Email Address:

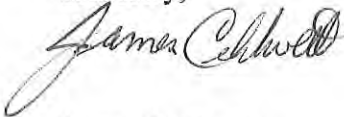
4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Brian Rearick      Position/Department: Field Inspector

Phone Number: 1-800-682-6342      Email Address:

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded for the planning process

Sincerely,



James Caldwell  
Chairman



**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: 12-16-13

Municipality/Organization: St. Clair Township

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and  
may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  Check here if you want access to the project SharePoint site

Name: Kristina Clark

Title/Department: Secretary

Address: P.O. Box 506, 550 Seward St, Seward, Pa 15954

Telephone: 814-446-5211

Fax: 814-446-

E-mail: StClair522@Comcast.net

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_



What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail                       Regular Mail                       Telephone

Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?

none

Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)

none

Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.

none



## Unity Township Supervisors

OFFICE HOURS:  
Monday - Friday  
8:00 a.m. to 4:00 p.m.

154 BEATTY-COUNTY ROAD  
LATROBE, PA. 15650  
PHONE: (724) 539-2546  
FAX: (724) 539-7088

November 6, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Unity Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Township of Unity is committed to participate in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of Unity:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:



- Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinance addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Michael J. O'Barto  
 Phone Number: 724-539-2546 ext. 13

Position/Department: Chairman  
 Email Address: [mobarto@unitytownship.org](mailto:mobarto@unitytownship.org)

Alternate/Secondary POC: Pete Tenerowicz  
Phone Number 724-787-1264

Position/Department: EMC  
Email Address: [ptenerowicz@unitytownship.org](mailto:ptenerowicz@unitytownship.org)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

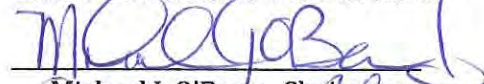
NFIP FPA: Merle Musick  
Phone Number: 724-539-2546 ext. 16

Position/Department: Building Inspector  
Email Address: [mmusick@unitytownship.org](mailto:mmusick@unitytownship.org)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

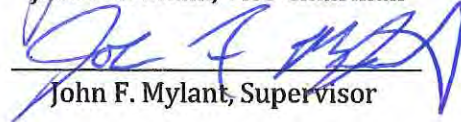
UNITY TOWNSHIP SUPERVISORS



Michael J. O'Barto, Chairman



Jacob M. Blank, Vice Chairman



John F. Mylant, Supervisor

alu

**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Tuesday, December 10, 2013 10:45 AM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of dan schmitt

<b>What Municipality or Organization are you with? *</b>	Unity Township
<b>Name of Project *</b>	Lloydsville culvert replacement
<b>Existing Issue Requiring the Project *</b>	insufficient hydraulic capacity
<b>Brief Description of the Project</b>	construct and install a new concrete culvert.
<b>Cost of the Project</b>	high
<b>Project Location</b>	Lloydsville, Unity Township
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	
<b>Potential Funding Sources</b>	
<b>Contact Name *</b>	dan schmitt
<b>Email Address *</b>	<a href="mailto:dans@gibson-thomas.com">dans@gibson-thomas.com</a>



**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Tuesday, December 10, 2013 10:48 AM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of dan schmitt

<b>What Municipality or Organization are you with? *</b>	Unity Township
<b>Name of Project *</b>	Lawson Heights storm sewer system
<b>Existing Issue Requiring the Project *</b>	downstream flooding of residents and businesses in lawson heights
<b>Brief Description of the Project</b>	this project would require the installation of a stormwater detention system. existing commercial businesses and nearby highways were constructed prior to stormwater requirements.
<b>Cost of the Project</b>	high
<b>Project Location</b>	Lawson Heights, Unity Township
<b>Proposed Start Date of Project</b>	
<b>Proposed Duration of Project (in months)</b>	
<b>Potential Funding Sources</b>	
<b>Contact Name *</b>	dan schmitt
<b>Email Address *</b>	<a href="mailto:dans@gibson-thomas.com">dans@gibson-thomas.com</a>



ESTABLISHED 1879

Westmoreland County, Commonwealth of Pennsylvania

3735 SEVENTH STREET ROAD  
NEW KENSINGTON, PA 15068  
T 724.335.3517  
F 724.335.9475

Date April 7, 2014

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Upper Burrell Township

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, Upper Burrell Township, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, Upper Burrell Township

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:

- Providing notices of the planning project on your municipal website with links to a County project website
- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC:  
David Knox  
Phone Number:  
(412) 670-3044

Position/Department:  
Emergency Management Coordinator  
Email Address:  
[knox@gmail.com](mailto:knox@gmail.com)

Alternate/Secondary POC:  
Melissa Holmes  
Phone Number:  
(724) 335-3517  
[mholmes@upperburrelltwp.com](mailto:mholmes@upperburrelltwp.com)

Position/Department:  
Township Secretary / Treasurer  
Email Address:  
[mholmes@upperburrelltwp.com](mailto:mholmes@upperburrelltwp.com)

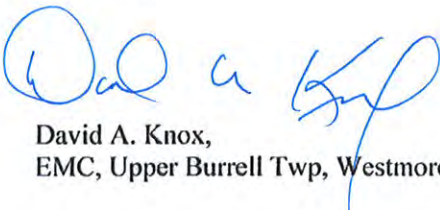
4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:  
David Kerchner  
Phone Number:  
(412)-767-5100

Position/Department:  
Bankson Engineers-Township Engineer  
Email Address:  
[dkerchner@banksonengineer.com](mailto:dkerchner@banksonengineer.com)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



David A. Knox,  
EMC, Upper Burrell Twp, Westmoreland County, Pa.



WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: April 7, 2014

Municipality/Organization: UPPER Burrell Twp.

County: Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1  (Have Access) Check here if you want access to the project SharePoint site

Name: DAVID KNOX

Title/Department: EMERGENCY MANAGEMENT COORDINATOR

Address: 3735 Seventh Street, New Kensington PA 15068

Telephone: (412) 670-3044

Fax: 724-335-9475

E-mail: KNOXDA@GMAIL.COM

Contact #2 (optional)  Check here if you want access to the project SharePoint site

Name: Melissa Holmes

Title/Department: UPPER Burrell Twp Secretary / Treasurer

Address: 3735 Seventh St, New Kensington PA 15068

Telephone: 724-335-3517

Fax: 724-335-9475



E-mail: M.Holmes@upperburrelltwp.com

What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?

E-mail                       Regular Mail                       Telephone



## Evaluation of Identified Hazards and Risk

Name: DAVID KNOX

Title: EMC-

Jurisdiction: UPPER Burrell TWP.

### PART I

Identified Hazards 2009 HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	Additional Comments
Dam Failures	NA	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NA	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NA	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	NC	



## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |   |   |
|---|---|
| <input type="checkbox"/> Avalanche/Glacier                                | <input checked="" type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                                  | <input checked="" type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                                 | <input type="checkbox"/> Radon Exposure                             |
| <input type="checkbox"/> Expansive Soils                                  | <input type="checkbox"/> Tsunami                                    |
| <input type="checkbox"/> Extreme Temperature                              | <input type="checkbox"/> Volcano                                    |
| <input checked="" type="checkbox"/> Hailstorm                             | <input checked="" type="checkbox"/> Wildfire                        |
| <input checked="" type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |   |
| <input checked="" type="checkbox"/> Invasive Species                      |   |

#### *Human-Caused*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure                   |
| <input type="checkbox"/> Civil Disturbance                         | <input checked="" type="checkbox"/> Urban Explosion      |
| <input type="checkbox"/> Disorientation                            | <input checked="" type="checkbox"/> Utility Interruption |
| <input type="checkbox"/> Drowning                                  | <input type="checkbox"/> War and Criminal Activity       |
| <input checked="" type="checkbox"/> Environmental Hazards          |  |

### Appendix 3: Capability Assessment Survey

Jurisdiction: UPPER Burrell Twp Point of Contact Name and Title: DAVID KNOX, EMC  
 Phone: 412 670 3044 Email: KNOXDA@GMAIL.COM

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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				
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006	Hazard County EMA	+	+	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan	X	10/5/2009	Westmoreland CO			Resolution 10-2009
Emergency Operations Plan	X	2008	Twp EMA			
Disaster Recovery Plan			" "			
Evacuation Plan			" "			
Continuity of Operations Plan			" "			
NFIP	X	3/17/11	Twp engineer			Article IV - Chapter
NFIP - Community Rating System	X	↓				165 of upper
Floodplain Regulations (spec. NFIP Flood Damage Prevention Ordinance)	X					Burrell e-codes
Floodplain Management Plan	X	3-21-11	↓			Ordinance 1 - 2011



Appendix 3: Capability Assessment Survey

Tool / Program	Status			Dept./Agency Responsible	Effect on Loss Reduction: + Support 0 Neutral - Hinder	Change Since Last Plan: + Positive - Negative	Comments
	In Place	Date Adopted or Updated	Under Development				
Zoning Regulations	X	8/3/2009		Twp Admin.			Ordinance 1-2009
Subdivision Regulations				"			Call Part of
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)				"			Ordinance 1-2009 Zoning
Open Space Management Plan (or Parks/Rec or Greenways Plan)							↓
Stormwater Management Plan / Ordinance	X						Chapter 280 - e-side
Natural Resource Protection Plan.							Zoning - 1-2009
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							Zoning 1-2009
Farmland Preservation Zoning							" "
Building Code	X	8/8/2005		Scott Channel PCS			" "
Fire Code							3rd Party Inspectors
Firewise							
Storm Ready							
Other							



2. **Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

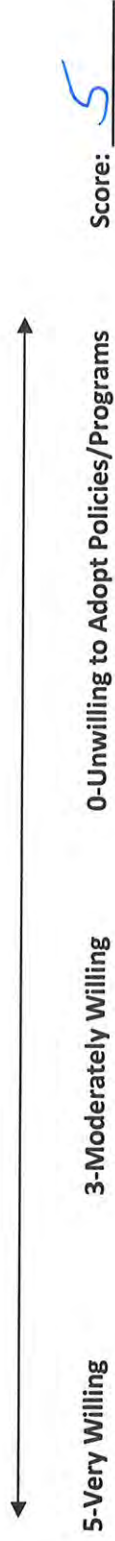
Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	X		Bankson Engineers	3rd Party
Planners or engineers (with natural and/or human caused hazards knowledge)	X		Bankson Engineers	3rd Party.
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		Professional Code Services	
Emergency Manager	X		Twp Admin (Volunteer)	
NFIP Floodplain Administrator	X		Bankson Engineers	
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				



3. **Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department/Agency	Comments
Capital Improvement Programming	X		Admin	
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				

4. **Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction's political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.





**5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability	X		
Administrative and Technical Capability	X		
Fiscal Capability	X		
Community Political Capability		X	
Community Resiliency Capability		X	

## Knox, Dave

---

**From:** Samantha J. Siok [ssiok@banksonengineers.com]  
**Sent:** Thursday, April 03, 2014 8:26 AM  
**To:** mholmes@upperburrelltwp.com  
**Cc:** knoxda@gmail.com; Knox, Dave  
**Subject:** FW: Hazard Mitigation Grant Application

Missy,

The Hazard Mitigation Grant was received by PEMA (see below). Just in case they come directly to you with questions, please let me know so I can address as quickly as possible.

Thanks...Sam.

Dave: Please provide any updates as they happen on the Mitigation 322 Plan as I just put "Pending Approval" in the grant application.

Samantha J. Siok, P.E.

 **BANKSON ENGINEERS, INC.**  
**Consulting Engineers**

UPS/FedEx: 267 Blue Run Road  
Cheswick, PA 15024

U.S. Mail: P.O. Box 200  
Indianola, PA 15051

Phone: 412-767-5100

Fax: 412-767-5107

[www.banksonengineers.com](http://www.banksonengineers.com)

---

**From:** Smith, Donald [<mailto:dowsmith@pa.gov>]  
**Sent:** Thursday, April 03, 2014 8:21 AM  
**To:** Samantha Siok; 'mholmes@upperburrelltwp.com'  
**Cc:** Hughes, Thomas (PEMA)  
**Subject:** RE: Hazard Mitigation Grant Application

The Upper Burrell Township HMGP-4149 application for an emergency generator was received on 3/31/2014. Your application is currently in input processing, we will advise you of any additional information needs once your application is reviewed by our HM staff. All applications will be forwarded to the State Hazard Mitigation Team for their review and ranking for submittal to FEMA sometime later this month or early May.

**Don Smith** | Mitigation Specialist  
Pennsylvania Emergency Management Agency  
Bureau of Recovery & Mitigation  
2605 Interstate Drive | Harrisburg, Pennsylvania 17110  
PEMA HQ 717 651-2279  
[dowsmith@pa.gov](mailto:dowsmith@pa.gov)  
[www.PEMA.state.pa.us](http://www.PEMA.state.pa.us)

BRIAN CARRICATO  
BOROUGH COUNCIL PRESIDENT

LOUIS PURIFICATO  
MAYOR

## *Borough of Vandergrift*

Larry D. Loperfito  
Solicitor

Office of the Secretary  
**Stephen J. DelleDonne**  
109 Grant Avenue  
Vandergrift, PA 15690  
(724) 567-7818

Joseph M. Caporali  
Chief of Police

November 12, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

**IN RE: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Vandergrift  
Borough**

Dear Mr. Tantlinger:

Per your letter dated October 11, 2013 the Borough of Vandergrift, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Upgrade project. By way of this letter, the Borough of Vandergrift:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.

- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data.
  - Identification of new development and anticipated development.
  - Identification of natural hazard risk area.
  - Identification of natural hazard events and losses that have impacted your community in the last five years.
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk.
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions.
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website.
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community.
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.

- Completing date and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of their governing body aft FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persona to be the Points of Contact for our jurisdiction. We understand that these POC's are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC:  
Stephen J. DelleDonne

Position/Department:  
Borough Secretary

Phone Number:  
(724) 567-7818

Email Address:  
[vgborosec@comcast.net](mailto:vgborosec@comcast.net)

Alternate/Secondary POC:  
Ron Rowe

Position/Department  
Emergency Management Coordinator

Phone Number:  
(724) 594-4357

Email Address:  
[ronsandy3@verizon.net](mailto:ronsandy3@verizon.net)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:  
Lucien Bove, P.E.

Position/Department:  
Borough Engineer

Phone Number:  
(724) 925-9269

Email Address:  
[boveengineering@comcast.net](mailto:boveengineering@comcast.net)

Mr. Christopher Tantlinger  
Page 4

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



STEPHEN J. DELLEDONNE  
Borough of Vandergrift



**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: \_\_\_\_\_ May 5, 2014 \_\_\_\_\_

Municipality/Organization: Washington Township

County: \_Westmoreland

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1                       Check here if you want access to the project SharePoint site

Name: \_\_\_Scott A. Slagle\_

Title/Department: \_\_Emergency Management Director/ Chief of Polcie

Address: \_\_289 Pine Run Church Rd Apollo, PA 15613\_\_

Telephone: \_\_724-727-3410\_\_\_\_\_

Fax: \_\_724-727-3411\_\_\_\_\_

E-mail: \_\_\_sslagle@wtpolice.com\_\_\_\_\_

Contact #2 (optional)                      \_\_\_\_\_ Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

E-mail       Regular Mail       Telephone



**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

**Flooding in the Pine Run Watershed**

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**



## Evaluation of Identified Hazards and Risk

Name: \_\_\_Scott Slagle\_\_\_\_\_ Title: \_\_\_EMA Director/Chief of Police\_

Jurisdiction: \_Washington Township\_\_

### PART I

<b>Identified Hazards 2009 HMP</b>	<b>How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?</b>  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	<b>Additional Comments</b>
Dam Failures	NC	
Droughts and Water Supply Deficiencies	NC	
Earthquakes	NC	
Energy Emergencies	NC	
Fire	NC	
Fixed Nuclear Facility	NC	
Floods	NC	
Hazardous Materials	NC	
Landslides	NC	
Nuclear Attack	NC	
Subsidence, Sinkhole	NC	
Terrorism	NC	
Tornadoes, Hurricanes Wind storms	NC	
Transportation Accidents	NC	
Winter Storms	NC	

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |  |  |
|--|--|
| <input type="checkbox"/> Avalanche/Glacier                     | <input checked="" type="checkbox"/> Lighting Strike      |
| <input type="checkbox"/> Coastal Erosion                       | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                      | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                       | <input type="checkbox"/> Tsunami                         |
| <input type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                      |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |

**Other Comments:**

[Empty comment box]



### Appendix 3: Capability Assessment Survey

Jurisdiction: Washington Township Point of Contact Name and Title: Chief Scott Slagle  
 Phone: 724-727-3410 Email: sslagle@wtpolice.com

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate its estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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	x	1/1/2013		WT EMA	+		
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							



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				
Zoning Regulations							
Subdivision Regulations	X			WT Supervisors			
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)	X			WT Supervisors			
Open Space Management Plan (or Parks/Rec or Greenways Plan)							
Stormwater Management Plan / Ordinance	X			WT Supervisors			
Natural Resource Protection Plan							
Capital Improvement Plan							
Economic Development Plan							
Historic Preservation Plan							
Farmland Preservation							
Building Code	X			UCC Official			
Fire Code	X			UCc Official			
Firewise							
Storm Ready							
Other							

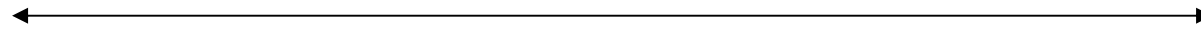
- 2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department/Agency	Comments
Planners (with land use / land development knowledge)	X		WT Planning Commission	
Planners or engineers (with natural and/or human caused hazards knowledge)	X		Senate Engineering	
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	X		Senate Engineering	
Emergency Manager	X		Scott Slagle	
NFIP Floodplain Administrator	X		UCC Code Official	
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	X		Office staff	
Grant writers or fiscal staff to handle large/complex grants				
Staff with expertise or training in Benefit-Cost Analysis				
Other				

- 3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State or Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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

- 4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction’s political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score:   3**

- 5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability	X		
Fiscal Capability	X		
Community Political Capability	X		
Community Resiliency Capability	X		



MAYOR  
JAMES J. GALLUCCI  
  
PRESIDENT OF COUNCIL  
GARY E. BELL

**WEST LEECHBURG BOROUGH**  
1015 PLAZAK STREET  
WEST LEECHBURG, PA 15656-9240  
PHONE: (724) 842-2653

SECRETARY  
PATRICIA GRANTZ  
PHONE: (724) 842-2653

November 12, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – West Leechburg Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Borough of West Leechburg is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of West Leechburg:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about our community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in our community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in our community which may include:
  - Providing notices of the planning project on our municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in our area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in our community
- Assist with the identification of stakeholders within our community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to our community.
- Involve our local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of our governing body after FEMA conditional approval.
- Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: **Lucien Bove**

Position/Department: **Borough Engineer**

Phone Number: **724-925-9269**

Email Address: **boveengineering@comcast.net**

Alternate/Secondary POC: **James J. Gallucci**

Position/Department: **Borough Mayor**

Phone Number: **724-845-8861**

Email Address:

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: **Lucien Bove**


Position/Department: **Borough Engineer**

Phone Number: **724-925-9269**

Email Address: **boveengineering@comcast.net**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

  
Gary E. Bell, President of Council

November 12, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate- West Newton Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013 the Borough of West Newton, is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of West Newton:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group ("Working Group"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this "Authorization and Acknowledgement" letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - o Structure and facility inventory data
  - o Identification of new development and anticipated development
  - o Identification of natural hazard risk areas
  - o Identification of natural hazard events and losses that have impacted your community in the last five years
  - o Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - o Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - o Providing notices of the planning project on your municipal website with links to a County project website

- o Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - o Advertising and supporting public meetings in your area.
  - o Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC Mary Popovich, Mayor

Phone Number: 724-972-3779

Mary@mayerpopovichwn.org

Alternate/Secondary POC: Pam Humenik

Secretary/Treasurer

Phone Number: 724-872-6860

wnboro@hotmail.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA:

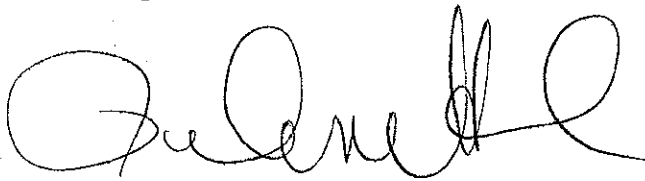
Position/Department:

Phone Number:

Email Address:

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Pamela M. Humenik  
Borough Sec./Treas.

A handwritten signature in black ink, appearing to read 'P. Humenik', written in a cursive style.



**Eith, Becca**

---

**From:** WestmorelandHMP website <jay.mahar@tetrattech.com>  
**Sent:** Tuesday, July 15, 2014 10:14 PM  
**To:** Kelly, Caitlin  
**Subject:** Project Submission

This is the filled up Project Submission Information of Paul C. Williams Sr.

<b>What Municipality or Organization are you with? *</b>	West Newton
<b>Name of Project *</b>	Youghiogheny River Level Gage
<b>Existing Issue Requiring the Project *</b>	History of River Flooding and need for better River Forecasting and Prediction tool. Existing staff gage is old and will need replaced in future.
<b>Brief Description of the Project</b>	Installation of both a manual-on site river gage and an automated-on/near river level gage with remote view and reporting capability. Also would prefer to add rate of flow, temperature and make up of water as well as other capabilities to the automated reporting system. These gages would both be mounted on and near the West Newton Route 136 Bridge over the Youghiogheny River in West Newton Borough. Uses would be for River Flooding Forecasting and Prediction for Emergency Management, Preparedness and Community Awareness.
<b>Cost of the Project</b>	Medium
<b>Project Location</b>	West Newton Borough
<b>Proposed Start Date of Project</b>	2015-03-31
<b>Proposed Duration of Project (in months)</b>	one
<b>Potential Funding Sources</b>	USGS, State, Local and Private donors
<b>Contact Name *</b>	Paul C. Williams Sr.
<b>Email Address *</b>	<a href="mailto:wnbemadirector39@comcast.net">wnbemadirector39@comcast.net</a>

# Youngwood Borough

17 South Sixth Street, Youngwood, Pennsylvania 15697

Phone: (724) 925-3660 Fax (724) 925-2121

Email: [youngwoodborough@comcast.net](mailto:youngwoodborough@comcast.net)

Joan B. Derco  
Mayor

Cloyd H. Crago  
Council President

November 11, 2013

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate – Youngwood Borough

Dear Mr. Tantlinger:

Per your letter, dated October 11, 2013, the Borough of Youngwood is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Youngwood:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:
  - Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.
  - Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
  - Support the Working Group selected to oversee the development of this plan.
  - Provide representation at municipal Planning Committee meetings (3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).

*Council meets the first Monday of every month  
at Youngwood Council Chambers*

- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
  - Support Public outreach efforts in your community which may include:
    - Providing notices of the planning project on your municipal website with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents and notice of public meeting via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
  - Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.
3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning

Committee meetings and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Robert Coletta

Position/Department: Director, Emergency Mgmt

Phone Number: 724-771-0010

Email Address: [boocoleHa@hotmail.com](mailto:boocoleHa@hotmail.com)

Alternate/Secondary POC: John Storey, Jr.

Position/Department: Deputy Director, Emergency Mgmt

Phone Number: 724-244-0731

Email Address: [jstorey@comcast.net](mailto:jstorey@comcast.net)

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Diane Derco

Position/Department: Secretary/Treasurer

Phone Number: 724-925-3660

Email Address: [youngwoodborough@comcast.net](mailto:youngwoodborough@comcast.net)

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,



Lloyd H. Crago  
Council President

## **APPENDIX E: PUBLIC AND STAKEHOLDER OUTREACH DOCUMENTATION**

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This appendix provides documentation of public and stakeholder outreach activities conducted as part of this plan update process. Documentation of Steering Committee and municipal planning partnership meetings may be found in Appendix C, “Meeting Documentation”.

Informational pamphlets contained in this appendix were distributed to participants throughout the planning process. These pamphlets were current as of August 2014. New guidance and information regarding certain mitigation programs have been released by FEMA. While these new guidelines are addressed in the plan and new informational pamphlets are under development, the original pamphlets distributed to participants have been included in this appendix.





## Westmoreland County Press Release

# Westmoreland County Stakeholder and Public Kick-off Meeting for the All-Hazards Mitigation Plan

Westmoreland County's Department of Public Safety invites the public to participate in updating the countywide Hazard Mitigation Plan (HMP). A Stakeholder and Public Kick-Off meeting will be conducted to introduce the HMP planning process on Tuesday, November 12, 2013 at the Westmoreland County Intermediate Unit Amphitheatre, 102 Equity Drive, off of Donahue Road. The meeting will be held from 9:00am – 11:00am and again from 7:00pm – 9:00pm. Residents, local officials, industry representatives, educators, and others are encouraged to attend.

In addition, to inform and engage the public and other local and regional stakeholders in the planning process, Westmoreland County has developed a hazard mitigation planning website at: [www.westmorelandhmp.com](http://www.westmorelandhmp.com)

This site includes an [online hazard awareness survey](#), and will include sections of the Draft Plan as it becomes available. The public is encouraged to visit the site, take the online survey, review the Draft Plan and provide input on the HMP planning process.

Westmoreland County is in the process of updating its 2009 All-Hazards Mitigation Plan to ensure eligibility for future mitigation funding from the Federal Emergency Management Agency (FEMA). This detailed plan addresses a variety of potential natural and non-natural hazards that could affect some or all of the county's residents.

“The update of this plan will allow the county and its participating municipalities to continue be eligible for future mitigation funding from FEMA,” said Hazard Mitigation Officer, Chris Tantlinger. “We are eager to get the public's input to help us create a detailed plan that will address a variety of potential hazards and help us reduce the vulnerability of our citizens to those hazards.”

Communities with a FEMA-approved HMP may apply for pre-disaster mitigation funding for projects to mitigate risk to both public and private property, such as home elevations and local flood control measures. Ultimately these projects will reduce vulnerability and enable communities to recovery more quickly from disasters.

For more information, contact Chris Tantlinger at the Westmoreland County Department of Public Safety at 724-600-7349 or [CTANTLIN@co.westmoreland.pa.us](mailto:CTANTLIN@co.westmoreland.pa.us)





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# Hazard Mitigation Plan 2014 Update



# What is Hazard Mitigation Planning?

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According to FEMA, Hazard Mitigation  
Planning is...

and...



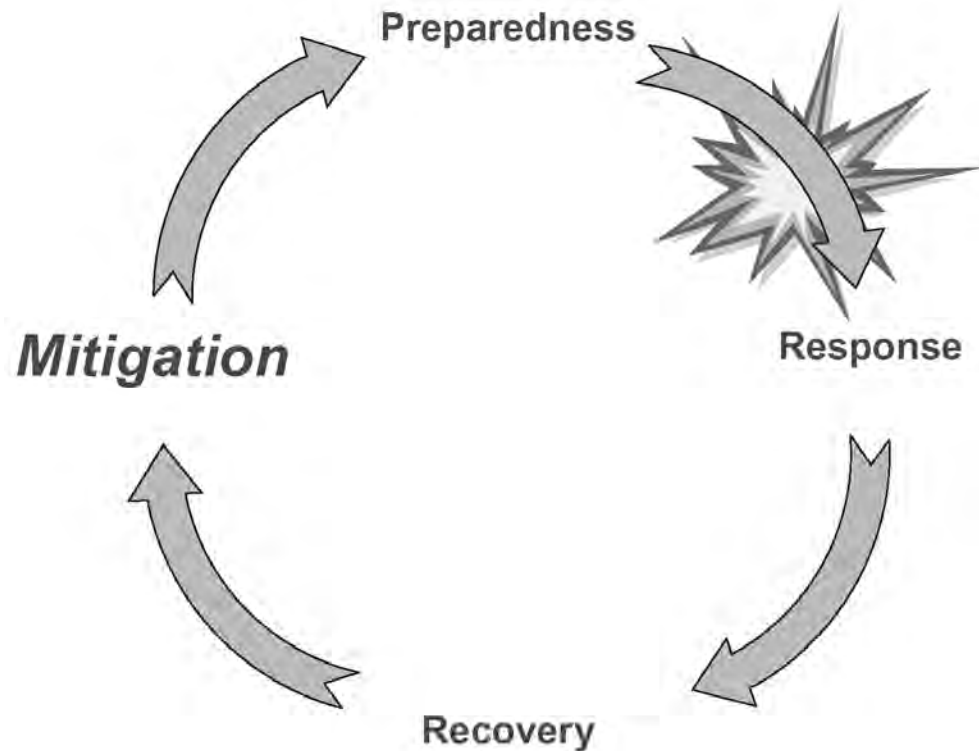
# What is Hazard Mitigation?

**“Mitigation”:**

*Sustained actions taken to reduce or eliminate long-term risk to life and property from a hazard event*

*or...*

*Any action taken to reduce future disaster losses*



# The Problem

---

- FEMA (the Federal Government) and States have found themselves cleaning up the same mess repeatedly
- Communities are not sustainable if they are vulnerable to crippling losses when the inevitable occurs
  - “Building in the floodplain is like pitching your tent on the highway when no cars are coming”
- Mitigation is how we break the cycle of loss; it is a wise investment in the future of communities



# Why Are We Preparing the Plan?

- To reduce our losses from natural and human-caused hazards
- To make our communities more “disaster-resistant”
- To maintain our eligibility for federal mitigation grant funding
  - Hazard Mitigation Grant Program (HMGP)
  - Hazard Mitigation Assistance (HMA) Grant Program
    - Pre-Disaster Mitigation (PDM) Program
    - Flood Mitigation Assistance (FMA) Program
    - Repetitive Flood Claims (RFC) Program

***A Local Mitigation Plan demonstrates a jurisdiction’s commitment to reducing risks from hazards and serves as a guide for decision makers as they commit resources to minimize the effects of hazards.***



# What Does an All-Hazards Plan Provide?

- A comprehensive, factual assessment of risk to support a strategy to manage risk to all hazards
- A detailed action plan the county and communities will implement to reduce risks to natural and human-caused hazards
- Coordination of mitigation efforts with other local, county, regional, state and federal entities
- Access to federal mitigation grant funding

**“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).**





# Who Must Have a “Plan” under Federal Law?

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- All “local governments”
  - States – Pennsylvania has a “Standard” Plan
  - Counties (for county assets)
  - Municipalities (cities, towns, villages)



# The Westmoreland County Plan and Update

---

- Westmoreland County and 53 of the 65 municipalities developed and adopted the original HMP.
- The Final Plan was approved by FEMA in 2009.
- By regulation, local HMPs must be formally updated, approved by FEMA, and adopted by jurisdictions every 5 years.
- Westmoreland County Department of Public Safety and the Department of Planning and Development are facilitating this planning process, with the support and direction of the Westmoreland County Hazard Mitigation Working Group and Tetra Tech.



# Why is Updating the Plan Important?

---

- HMPs are intended to guide and direct risk-reduction activities – thus they need to stay relevant.
- Our exposure and vulnerability to hazard risk continually changes:
  - As nature (or human impacts on nature) changes
  - As human actions increase or decrease vulnerability
  - As our capabilities to manage risk change (knowledge about risk, funding, etc.)
- How we propose to continue to manage hazard risk at the county, local and personal levels continually needs to be monitored, assessed and adjusted.
- Mitigation Strategies (projects, initiatives, etc.) need to address our risk as we now know it.

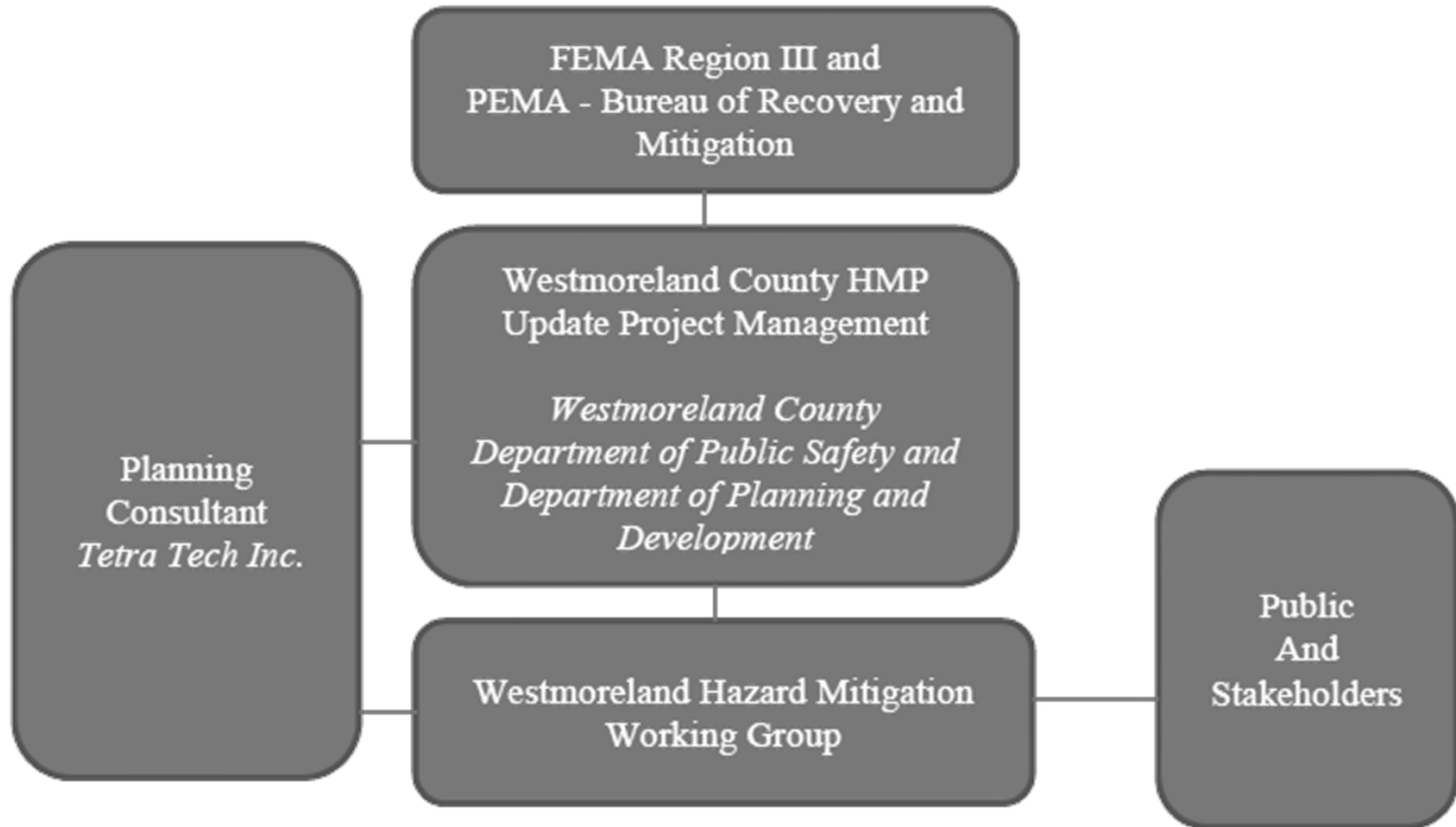


# HMP Update Process

- Organize Resources
  - Assess the Risk
  - Review and Update the HMP
  - Develop Procedures for Plan Implementation, Monitoring and Update
  - PEMA/FEMA Region 3 Approval
  - Adopt the Plan
- Engage a Wide Range of “Stakeholders”
    - Federal, State, Regional and Local Agencies
    - Business and Civic Groups
    - Academic Institutions
    - Other “Local Governments”
    - The Public



# Organize the Resources



# Assess the Risk

- Identify the Hazards of Concern (HOC)
- Profile the HOC
  - Where do they occur?
  - How often?
  - Magnitude?
  - Historic Events and Losses
- Identify What is at Risk (inventory)
- Conduct a Risk Assessment
  - Exposure
  - Vulnerability





# Assess the Risk: Hazards of Concern Identification

---

- **Hazards of Concern** – Natural and human-caused hazards that pose significant risk to the county and we can address through mitigation rather than only through preparedness, response and recovery.
- We want to review and update those “hazards of concern” that we carry through the planning process.
- Our effort should be proportional to the risk of HOCs.
- Each municipality has differing risk to the HOCs.



# Hazards of Concern

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## ■ Natural Hazards of Concern

- Drought
- Earthquake
- Extreme Temperature
- Flood
- Hailstorm
- Hurricane, Tropical Storm
- Landslide
- Lightning Strike
- Radon Exposure
- Wildfire
- Wind
- Winter Storm



# Hazards of Concern (continued)

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- Human-Caused Hazards of Concern
  - Dam Failure
  - Environmental Hazards and Explosions
  - Major Structural Fires
  - Nuclear
  - Subsidence / Sinkhole
  - Terrorism
  - Transportation Accident
  - Utility Interruption



# Assess the Risk – Hazard Profiling

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- Hazards are profiled (characterized) according to:
  - Designated hazard areas
  - Background and local conditions
  - Historic frequency and probability of occurrence
  - Historic losses and impacts
  - Severity



# Assess the Risk – Inventory of Assets

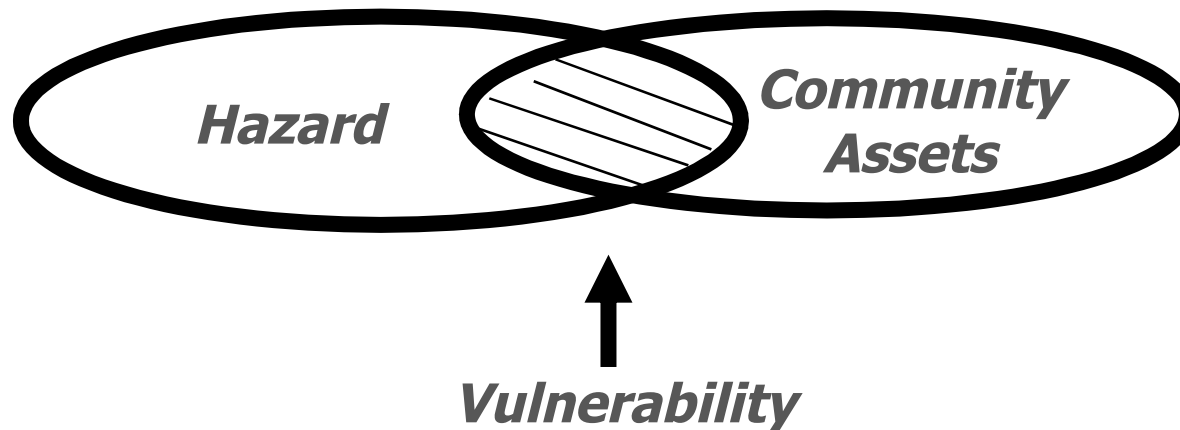
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- What is at risk?
  - People
  - Property
  - Economy
  - Environment
  - Critical Facilities (essential facilities, utilities, transportation features, high-potential loss facilities and user-defined facilities)
    - Police, fire, emergency services
    - Hospitals and medical care facilities
    - Academic facilities
    - Sheltering facilities
    - Infrastructure (transportation systems, utilities)
    - High-potential loss facilities (dams, military installations, hazmat)



# Assess the Risk – Vulnerability Assessment

- Vulnerability Assessment – Predicting our suffering if we do nothing further to mitigate our risk:
  - Given current conditions, which have changed since 2009?
  - Given our improved understanding of risk and tools to assess that risk, which have changed since 2009?





# Update the Hazard Mitigation Goals and Objectives

---

- **Goals:** General guidelines that state what we want to achieve. Should be consistent with the State goals and other local goals.
  - Example: “Protect existing properties.”
- **Objectives:** Define strategies or implementation steps to attain a stated goal.
  - Example: “Enact or enforce regulatory measures that ensure new development will not increase flood threats to existing properties.”
- **Actions:** Specific activities that will achieve our goals and objectives while managing hazard risk.



# Identification and Analysis of Mitigation Actions

---

- Mitigation actions need to be realistic, achievable and action-oriented.
- Can include both regional actions, as well as jurisdiction-specific.
- Can address both public and private property.
- For each proposed mitigation action, the following will be identified:
  - Implementation timeline
  - Estimated cost and benefits (avoided losses)
  - Potential funding sources
  - Lead agency or department
  - Supporting agencies



# Mitigation Actions

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- **Prevention.** Measures such as planning and zoning, open space preservation, land development regulations, building codes, storm water management
- **Property Protection.** Measures such as acquisition, relocation, storm shutters, rebuilding, barriers, flood-proofing, insurance, and structural retrofits for high winds
- **Public Education and Awareness.** Measures such as outreach projects, real estate disclosure, hazard information centers, technical assistance



# Mitigation Actions (continued)

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- **Natural Resource Protection.** Measures such as erosion and sediment control, stream corridor protection, vegetative management, and wetlands preservation
- **Emergency Services.** Measures such as hazard threat recognition, hazard warning systems, emergency response, protection of critical facilities, and health and safety maintenance
- **Structural Projects.** Measures such as dams, levees, seawalls, bulkheads, retaining walls, channel modifications, storm sewers, and retrofitted buildings and elevated roadways



# Acquisitions and Elevations

- Acquisition
  - Eliminates exposure
- Elevation
  - Reduces vulnerability



*“At the first sign of a flood, you just push this little button.”*

# Public Education

## ■ Personal Mitigation

- Hazard insurance and the NFIP
- Elevations and acquisitions
- Preservation of valuables
- Structural retrofits (site grading, wet and dry flood proofing, roof clips, non-combustible roofs)
- Evacuation or in-place sheltering plans
- Defensible space (wildfire)
- Early-warning and alerts
- Communications





# Integration with Other Plans and Programs

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- The Hazard Mitigation Plan should complement and support other plans and regulatory mechanisms
  - Comprehensive Emergency Management Plans (CEMP)
  - Comprehensive / Master Plans (regional and local) –plans that guide and direct land use and development
  - Stormwater Management Plans (flood problem areas and potential solutions identified)
  - Capital Improvement Plans (some of these projects are grant eligible)



# Plan Implementation

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- Your mitigation strategy section provides a “blueprint” to follow for progressively reducing your community’s hazard risk.
- Mitigation grant opportunities open regularly:
  - The annual HMA grant window opens in June of each year.
  - HMGP funding comes in the wake of Declared Disasters in the State.
- County Hazard Mitigation Coordinators will continue to alert planning partners of grant opportunities as they arise, including all guidance and instructions provided by PEMA and FEMA.



# Mitigation Funding

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- Grant funding typically covers 75% of project costs.
- Projects often provide long-term reductions in municipal services costs.
  - Emergency Response and Protective Services
  - Maintenance and repair of infrastructure
- HM grants can fund post-disaster mitigation of damaged structures and infrastructure (404 and 406 funding).



# How to Stay Involved in the Planning Process

---

- Visit the Westmoreland County Hazard Mitigation Plan website ([www.westmorelandhmp.com](http://www.westmorelandhmp.com))
  - Learn more about the planning process
  - Review and provide comments on draft sections of the plan
- Complete Surveys/Handouts
  - Citizen Hazard Preparedness and Mitigation Survey
  - Municipal “Handouts”
- Assist with Mitigation Strategy Development
  - Assist with identifying mitigation projects and initiatives to reduce hazard risk
  - If your property is a candidate for mitigation (e.g. elevation, acquisition), please contact your municipal mitigation planning point-of-contact





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## **Tetra Tech Project Contact:**

**Caitlin Kelly, MSEM, MEP**

**Tetra Tech, Inc.**

**240 Continental Drive, Suite 200**

**Newark, DE 19713**

**Email: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)**

**Phone: (302) 283-2218**

**Fax: (302) 454-5988**



# MUNICIPAL AGENCY

## WESTMORELAND COUNTY ALL HAZARD MITIGATION PLAN UPDATE

Kick Off Meeting  
SIGN-IN SHEET  
MEETING DATE/TIME: November 12, 2013 9:00am - 11:00am

Name	Title	Agency/Municipality	Phone Number	E-mail
Kentyn Martin	Assoc. / Co-ordinator	So. Greensburg PA	724 837-8858	Kentyn@comcast.net
Bruce R. Legitt	Secretary/Exec	Penntownship PA	7/744-2171	brucehightepenntwp.org
Jobbie Rhodes	Secretary	Cook Township	724-593-7471	cooktwp@ntot.com
DeTe Lenerowicz	E.M.A. Director	Unity Twp.	724-787-1264	ptenerowicz@unitytwp.org
SOBER GERARD	EMR	Hempfield Twp	724-640-6336	REGARD@HempfieldPA.org
Kristina Clark	Secretary	St. Clair Twp	814-446-5211	stclair522@comcast.net
Anthony Roccano	GIS Coordinator	Westmoreland Co	724.370.6888	AROCANO@co.westmoreland.pa.us
John Shepherd	Township Manager	N Huntingdon Twp	724 865 5806	jshepherd@nshp.org
Paul A Fry	Sec - TRANS	Ligonier Boro	924 396 3870	LigonierBoard@comcast.net
Kirk Nolan	EMR	Delmont Boro	412.370.0851	kirk.nolan@delmont.com
FRANK SPANGLER	COUNCIL	HUNTER PA	724-925-3574	
ANGILO PALONE	Boro MGR	Scottdale Pa	724 887 8220	scottdaleboro@zoominternet.net
Bruce Beitel	Town Mgr Mgr	Hempfield	724-858-0565	bbeitel@hempfieldtwp.org
Chris Bous	Deputy Director Westmoreland Co. Planning	Westmoreland County	724.830.3995	cbous@co.westmoreland.pa.us
Merle Musick	Boro Unity Twp	Unity Twp	724 539 2546	mmusick@unitytwp.org





# MUNICIPAL AGENCY

## WESTMORELAND COUNTY ALL HAZARD MITIGATION PLAN UPDATE

Kick Off Meeting  
SIGN-IN SHEET  
MEETING DATE/TIME: November 12, 2013 9:00am - 11:00am

Name	Title	Agency/Municipality	Phone Number	E-mail
John Storey Jr	Rep. 41	Youngwood Borough	(724) 244-0731	jstorey@comcast.net
LUCIEN BOVE	PE	WEST LEBURGH BOROUGH	724-925-9269	boveengineering@comcast.net
DRU STEVENS	Demuc	WCAPS		
Les Harvey	EMC. M.T.	CITY OF GBC	724-938-4305	LHarvey@GreensboroPa.org
Bob Zumbel	SUPERVISOR	SALAMON TWP	724 668 7500	
LUCIEN BOVE	PE	NORTH IRWIN BOROUGH	724-925-9269	boveengineering@comcast.net
Fred KOPAS	Commissioner	Westn Co.	724 830 3102	Hkopas@co.westmoreland.pa.gov
Darlene Bracken	EM Specialist	PEMA W/A	724-357-0106	dbracken@pa.gov
Charles Thornton	WCAPS MTD	Westmoreland	724 600 7349	charlin@westmorelandpa.gov



# MUNICIPAL/AGENCY

## WESTMORELAND COUNTY ALL HAZARD MITIGATION PLAN UPDATE

Kick Off Meeting  
SIGN-IN SHEET  
MEETING DATE/TIME: November 12, 2013 9:00am - 11:00am

Name	Title	Agency/Municipality	Phone Number	E-mail
JIM PILLSBURY	HYDRAULIC ENGINEER	WESTMORELAND CONSERVATION DIST.	837 5271	jim@wcdpa.com
KEVIN WALTERS	SUPERVISOR	LOYAL HANNA TWP	724-433-3481	
Lois Ledford	Sec Treasurer	Derry Borough	724 694-2030	derry.boro@comcast.net
John S. Myrba	Unity Supervisor	Unity Twp	724-787-6803	Info@UnityTownship.org
Duane HUTTER	MT Pleasant Supervisor	MT Pleasant	724 423-2853	



WESTMORELAND COUNTY ALL HAZARD MITIGATION PLAN UPDATE

Kick Off Meeting  
SIGN-IN SHEET  
MEETING DATE/TIME: November 12, 2013 7:00pm - 9:00pm

Name	Title	Agency/Municipality	Phone Number	E-mail
Chris Tantlinger	WEDPS Assoc	WEDPS	724 640-6601	christh@westmoreland.gov
Tim Corcoran	Dir #22	New Market	724 787-4718	mark@newmarket.com
Russalo Olschan	EMA A	Reston/Twp	724-350-6209	olschan@wvazion.net
Anthony Bueyry	Dir #	East Vandergrift	724-567-5033	ABueyry@concrst.net
Jeremy Bueyry	Dir # 19	Manor Bazaar	412 612 4599	NOXID@CONCAST.NET
DAVID LYNN	President of Council	Manor Bazaar	215 388 2461	THE1STROSE@AOL.COM
Deborah A Beler	Mayor	New Alex Baro	724-668-2621	dlegarski@concrst.net
Nelly McNaughton	DEP Dir #22	New Alex Baro	724-468-7385	mmnaughton715@qmail.com
John E. Gansser	EMC Dir # 26	N. Belle Vernon	724-880-8159	CH.EGERS@NVAJRENAL.COM
Paul Rupnik Jr.	EMA Coord	Seaside Twp	724-989-2703	prupnik@gmail.com
Brian Jones	WEDPS Dir	WEDPS	724-600-7302	bjones@westmoreland.gov
MICHAEL BROOKER	WEDPS Director	WEDPS	724-600-7301	mbrooker@concrst.net
Ronald Neaton	President of Council	Deerlinton B.	724 567 7121	mneaton@concrst.net
James King	EMA Coord	East Huntingdon Twp	412-558-0241	KingFF74@yahoo.com
Mark Shire	Solicitor	Monessen City	724-654-8881	mjs.shirelaw@wvazion.net



R. Tyler Courtney  
Commissioner

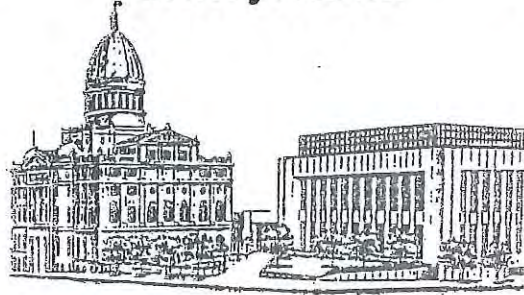
Charles W. Anderson  
Chairman

Ted Kopas  
Commissioner

# Westmoreland County Pennsylvania

DEPARTMENT OF  
PUBLIC SAFETY  
724-600-7300

Michael F. Brooker  
Director  
724-600-7301  
Fax: 724-600-7388



9-1-1  
DISPATCH CENTER  
724-600-7359

Brian L. Jones  
Deputy Director  
724-600-7302  
Fax: 724-600-7388

FAX COVER SHEET

TO: Lee Kunkle  
FROM: Christopher Tantlinger  
DATE: 12-18-13



Number of pages including cover sheet 2



```

*****
*
*                               TRANSACTION REPORT                               *
*
*                               DEC-18-2013 03:06 PM                             *
*   FOR: Westm'd D.P.S.           724 600 7388                               *
* _____*
*   SEND(M)                                                                *
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* _____*
*   DEC-18 03:05 PM 917248345460         2       46"   OK   *
* _____*
*****

```

# Borough of South Greensburg LED MESSAGE CENTER REQUEST

Name of Individual or Organization <i>WESTMORELAND COUNTY DEPT. OF PUBLIC SAFETY</i>		
Address <i>911 PUBLIC SAFETY ROAD</i>		
City, State, Zip <i>GREENSBURG PA 15601</i>		
Contact Name <i>DAN STEVENS</i>	Email <i>dstevens@co.westmoreland.pa.us</i>	Phone <i>724-600-7305</i>

## MESSAGE

FRAME 1	Line 1 <i>HELP US HELP YOU</i>
	Line 2 <i>WWW.WESTMORELANDHMP.COM</i>
	Line 3 <i>CITIZEN PREPAREDNESS SURVEY</i>
FRAME 2	Line 1
	Line 2
	Line 3
FRAME 3	Line 1
	Line 2
	Line 3

Monday Start Date (mm/dd/yyyy) <i>12/23/2013</i>		Number of Weeks Message is to Appear <i>NLT MARCH 1, 2014</i>	
<b>PERSONAL MESSAGES ONLY</b> (Limited to One Frame)	Day 1 (mm/dd/yyyy)	Day 2 (mm/dd/yyyy)	Day 3 (mm/dd/yyyy)
PAYMENT DUE <input type="checkbox"/> 2-Week Message = \$15.00 <input type="checkbox"/> 3-Day Personal Message = \$5.00			
I certify that I am authorized to submit this request by the individual/organization named above. Further, it is agreed that the Borough of South Greensburg will not be held liable for any actions including errors or omissions, regarding the processing, possible denial, possible acceptance or implementation of this message request, including the display of the message.			
Signature <i>Christopher Tantlinger</i>		Print Name <i>CHRISTOPHER TANTLINGER</i>	
		Date <i>12/18/13</i>	
<b>Mail this document along with payment to:</b>			
Borough of South Greensburg ATTN: LED Message Center 1515 Poplar Street South Greensburg, PA 15601-5497			



LEE Kunkle 837-8858

FAR 724-834-5460

## South Greensburg LED Message Center

South Greensburg Borough Council has erected a LED Message Center to display messages from the Borough and its various agencies: Police, Fire, Recreation and other related activities. Residents and/or organizations of South Greensburg will also be offered the opportunity to display messages to the community at large.

### **What is the LED Message Center?**

The LED Message Center (LMC) is located at the corner of Broad Street and Huff Avenue, South Greensburg, PA. Its purpose is to provide a means to display messages that benefit the community.

### **What types of messages can be displayed on the LMC?**

Messages from community service entities for events that provide a clear benefit to the local community are eligible. In keeping with the principles upon which the Borough was founded, political or religious messages will not be permitted. South Greensburg Borough Council reserves the right to reject any message that is deemed to fall outside the mission of the project. Specific message content eligibility criteria can be found in the section titled Eligibility.

### **Who can request to have their message displayed on the LMC?**

In general, the LMC is for service, public safety, educational and government related entities. Specific entity eligibility criteria can be found in the section titled Eligibility.

### **How and when are messages displayed?**

All messages are displayed on a weekly basis. Accordingly, messages are displayed Monday through Sunday 24 hours a day.

### **How many times per day will a message be displayed?**

Any one message will be displayed quite often. The specific number of times is dependent on the total number of messages being displayed on any given day.

### **What is the maximum length of a message?**

There is no maximum message character length, however it must be limited to 3 lines each on 3 full frames. Use the space on the attached form to prepare your message content. Remember **SHORTER IS BETTER** as your message can be displayed and retained quicker and easier by the motoring public.

### **What message size works best?**

While the maximum message size is 3 frames, for maximum readability and delivery of a message to the motoring public, shorter is preferable. It is suggested that some time and thought be given to preparing a message that effectively delivers the required information in as few characters as possible.

### **Is there a fee to display a message?**

Yes. While the Borough Council funded the acquisition and installation of the sign, the project criteria specified that the sign become self-sufficient for day-to-day operation. Therefore, a fee per message has been established to cover, utilities, insurance, maintenance, and eventual replacement of the sign. Fees are \$15.00 for a 2 week period and \$5.00 for a 3 day personal message.

HELP US HELP YOU  
WWW.WESTMORELANDHMP.COM

**What are the message request submission timelines?**

With the message display week starting every Monday, a properly submitted message request form must be received by the Borough of South Greensburg 3 days before the Monday start date of your message.

**Is there a minimum or maximum time period that a message can be displayed?**

Event messages can be displayed for a two-week minimum and a one-year maximum in two week increments. The South Greensburg Borough Council reserves the right to restrict the time period any message is displayed. A week is defined as Monday through Sunday.

**How is a message request submitted?**

The message request for, including payment, must be mailed via the United States Postal Service (USPS) or delivered to the Borough Office to the address provided on the form.

**What payments methods are accepted?**

Payment can be made by cash or check made payable to the "Borough of South Greensburg."

**Eligibility**

**The requesting individual or organization must meet all of the following requirements:**

1. The message must clearly serve or promote an educational, charitable, or public service event or purpose, or business purpose.
2. Requests from political organizations will be denied.
3. Requests to display message content of a political or religious nature will be denied except for fundraising events for religious organizations or alcohol related messages are not permitted nor messages deemed by the Borough to be unacceptable because of discriminatory content or content that is questionable for the public.
4. Special requests such as birthdays and anniversaries may be displayed for 3 days.
5. Borough Council retains the right to deny any request for any reason.
6. Borough Council retains the right modify a message to improve its display.
7. Borough Council reserves the right to change requirements at anytime without notice. Please visit the Borough of South Greensburg website ([www.southgreensburg.org](http://www.southgreensburg.org)) to download and use the latest version of this document.
8. Only one event or message may displayed per request.
9. Clearly and legibly complete all of the information required by the form attached.
10. Mail or deliver the completed form to Borough of South Greensburg, 1515 Poplar Street, South Greensburg, PA 15601
11. Make checks payable to: "Borough of South Greensburg."
12. Forms with payment must be received prior to the message being displayed.



## Westmoreland County Press Release

# Public Review of the Natural and Human-Caused Hazard Profiles for the Westmoreland County All-Hazards Mitigation Plan

Westmoreland County's Department of Public Safety will be posting the natural and human-caused hazard profiles to the Westmoreland County Hazard Mitigation Planning website at: [www.westmorelandhmp.com](http://www.westmorelandhmp.com). This site includes an [online hazard awareness survey](#), and will include all sections of the Draft Hazard Mitigation Plan as they become available. The public is encouraged to visit the site, take the online survey, review the Draft Hazard Mitigation Plan and provide input on the HMP planning process.

Westmoreland County is in the process of updating its 2009 All-Hazards Mitigation Plan to ensure eligibility for future mitigation funding from the Federal Emergency Management Agency (FEMA). This detailed plan addresses a variety of potential natural and non-natural hazards that could affect some or all of the county's residents.

"The update of this plan will allow the county and its participating municipalities to continue be eligible for future mitigation funding from FEMA," said Hazard Mitigation Officer, Chris Tantlinger. "We're very eager to get the public's input to help us create a detailed plan that will address a variety of potential hazards that could affect some or all of our citizens."

For more information, contact Chris Tantlinger at the Westmoreland County Department of Public Safety at 724-600-7349 or [CTANTLIN@co.westmoreland.pa.us](mailto:CTANTLIN@co.westmoreland.pa.us)



## Westmoreland County Press Release

# Westmoreland County Stakeholder and Public Hazard Mitigation Planning Workshop for the All-Hazards Mitigation Plan

Westmoreland County's Department of Public Safety invites the public to participate in updating the countywide Hazard Mitigation Plan (HMP). The County will hold its next Hazard Mitigation Planning Workshop on Wednesday, February 26, 2014 from 7:00pm – 9:00pm and again on Thursday, February 27, 2014 from 9:00am – 12:00pm. The workshops will be held at the Westmoreland County Intermediate Unit Amphitheatre, 102 Equity Drive, off of Donahue Road. Residents, local officials, industry representatives, educators, and others are encouraged to attend.

Background information about the plan is now on the Westmoreland County Hazard Mitigation Planning website at: [www.westmorelandhmp.com](http://www.westmorelandhmp.com). This site includes an [online hazard awareness survey](#), and will include sections of the Draft Plan as it becomes available. The public is encouraged to visit the site, take the online survey, review the Draft Plan and provide input on the HMP planning process.

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For more information, contact Chris Tantlinger at the Westmoreland County Department of Public Safety at 724-600-7349 or [CTANTLIN@co.westmoreland.pa.us](mailto:CTANTLIN@co.westmoreland.pa.us)



## HAZARD MITIGATION PLAN UPDATE WESTMORELAND COUNTY, PENNSYLVANIA

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### Westmoreland County Stakeholder & Public Outreach Risk Assessment Workshop: Session 1 Wednesday, February 26, 2014 at 7:00pm – 9:00pm

- Welcoming Remarks and Introductions: *Westmoreland County Official*
- Westmoreland County Hazards Mitigation Plan Update Presentation
  - What is a Hazard Mitigation Plan?
  - Why we are we updating the 2009 Plan?
  - What having an approved plan does and does not gain you?
  - What goes into the planning process?
    1. Organize the Resources
    2. Assess the Risk
    3. Review and Update the HMP
    4. Develop Procedures for Plan Implementation, Monitoring and Update
    5. PEMA/FEMA Region 3 Approval
    6. Adopt the Plan
  - What will be expected of each participant?
- Public Outreach
  - Westmoreland County HMP project site ([www.westmorelandhmp.com](http://www.westmorelandhmp.com))
  - Citizen Preparedness and Mitigation Survey
- Stakeholder Information and Data Collection
  - Intent to Participate
  - Evaluation of Identified Hazards and Risk
  - Capability Assessment
  - Mitigation Project Capture Worksheet
- Questions and Answers

#### Project Contacts

##### **Westmoreland County:**

Christopher R. Tantlinger  
HAZMAT Coordinator/Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
Phone: 724-600-7349  
Email: CTANTLIN@co.westmoreland.pa.us

##### **Contractor:**

Caitlin Kelly, MSEM, MEP  
Tetra Tech, Inc.; 240 Continental Drive Suite 200, Newark, DE 19173  
Phone: (302) 283-2218  
Email: caitlin.kelly@tetrattech.com





## HAZARD MITIGATION PLAN UPDATE WESTMORELAND COUNTY, PENNSYLVANIA

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### **Westmoreland County Stakeholder & Public Outreach Risk Assessment Workshop: Session 2 Wednesday, February 27, 2014 at 9:00am – 12:00pm**

- Welcoming Remarks and Introductions: *Westmoreland County Official*
- Westmoreland County Hazards Mitigation Plan Update Presentation
  - What is a Hazard Mitigation Plan?
  - Why we are we updating the 2009 Plan?
  - What having an approved plan does and does not gain you?
  - What goes into the planning process?
    1. Organize the Resources
    2. Assess the Risk
    3. Review and Update the HMP
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  - Mitigation Project Capture Worksheet
- Questions and Answers

#### **Project Contacts**

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HAZMAT Coordinator/Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
Phone: 724-600-7349  
Email: CTANTLIN@co.westmoreland.pa.us

##### **Contractor:**

Caitlin Kelly, MSEM, MEP  
Tetra Tech, Inc.; 240 Continental Drive Suite 200, Newark, DE 19173  
Phone: (302) 283-2218  
Email: caitlin.kelly@tetrattech.com







## WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE STAKEHOLDER & PUBLIC MEETING

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### Welcome to the Stakeholder & Public Outreach Risk Assessment Workshop for the 2014 Westmoreland County Hazard Mitigation Plan Update

Please visit the Westmoreland County Hazard Mitigation Plan Update Website by going to [www.westmorelandhmp.com](http://www.westmorelandhmp.com) and selecting the links on the left hand side, to:

- Learn more about hazard mitigation and this planning process
- Take the Online Citizen Hazard Preparedness and Mitigation Survey
- Review and provide input on draft sections of the Plan Update document, as they become available

#### Project Contacts

##### **Westmoreland County:**

Christopher R. Tantlinger  
HAZMAT Coordinator/Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
Phone: 724-600-7349  
Email: CTANTLIN@co.westmoreland.pa.us

##### **Contractor:**

Caitlin Kelly, MSEM, MEP  
Tetra Tech, Inc.; 240 Continental Drive Suite 200, Newark, DE 19173  
Phone: (302) 283-2218  
Email: caitlin.kelly@tetrattech.com



# HAZARD MITIGATION Risk Assessment Workshop



Last Name	First Name	Title	Representing	E-Mail/Phone #	Signature
Stevens	DAN		WCDP	on file	
Crouse	Susan		Laurel Mt Borough	winterset@verizon.net 724 238-6844	
KNOX	DAVID	EMC	Upper Merion Burrell	KNOXPA@GMAIL.COM	
Snyder	Clyde		TH	Clyde.Snyder@tetratech.com	
BEAUFORT	John		LIGONIER TWP.	John@BEAUFORTSERVICES.COM	
TANLAWAR	Christopher		WOODS		
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**WESTMORELAND COUNTY ALL HAZARD MITIGATION PLAN UPDATE**  
**Risk Assessment Workshop**  
**SIGN-IN SHEET**  
**MEETING DATE/TIME: February 27, 2014 9:00am – 12:00pm**

Name	Title	Agency/Municipality	Phone Number	E-mail
BRUCE LIGHT	SEC./MGR	PENN TWP	717-44-2171	bruce.light@penn.twp.org
DAN STEVENS	Deputy em	WCOPS	on file	on file
Chris Bova	Deputy Director	WC Planning Dept.	724 830 3995	
Chris Tompflinger	HMC	WCOPS	724 648-6601	
Trudy Markcom	Sec/Treas	Donegal Twp.	724-593-6309	dantype@htst.com
Linda Sisson	Sec/Treas	Donegal Boro	724 593-6222	donegalboro@htst.com
Brit Gaines	Mayor	Donegal Boro	724-787-6770	bg.gaines120@gmail.com
Clyde Snyder		FF	412-921-8904	Clyde.Snyder@tetrator.com
John Storey Jr	Public Works Supervisor	Youngwood Boro	724 925-3033	jstorey@comcast.net
LUCIEN BOVE	PE	WEST LEECHBURG	724-925-9269	boveengineering@comcast.net
" "	" "	VANDERGRIFT	" "	" "
" "	" "	NORTH IRWIN	" "	" "
" "	" "	IRWIN	" "	" "
" "	" "	NEW STANTON	" "	" "
" "	" "	AVONMORE	" "	" "



**WESTMORELAND COUNTY ALL HAZARD MITIGATION PLAN UPDATE  
Risk Assessment Workshop  
SIGN-IN SHEET**

**MEETING DATE/TIME: February 27, 2014 9:00am – 12:00pm**

Name	Title	Agency/Municipality	Phone Number	E-mail
LUCIEN BOVE	PE	HYDE PARK	724-925-9269	boveengineering@comcast.net
" "	" "	HUNKER	" "	" "
JONATHAN TAKAC				jtakac@yahoo.com
Melvin Steele		NEW STANTON	724-331-1431	melsteele50@aol.com
Edie Troop	Supervisor	So. Hunt. Twp.	724-872-8474	
RICHARD GATES	SUPERVISOR	So. Hunt Twp.	724-872-8474	





TETRA TECH

complex world | CLEAR SOLUTIONS™



# Hazard Mitigation Plan 2014 Update



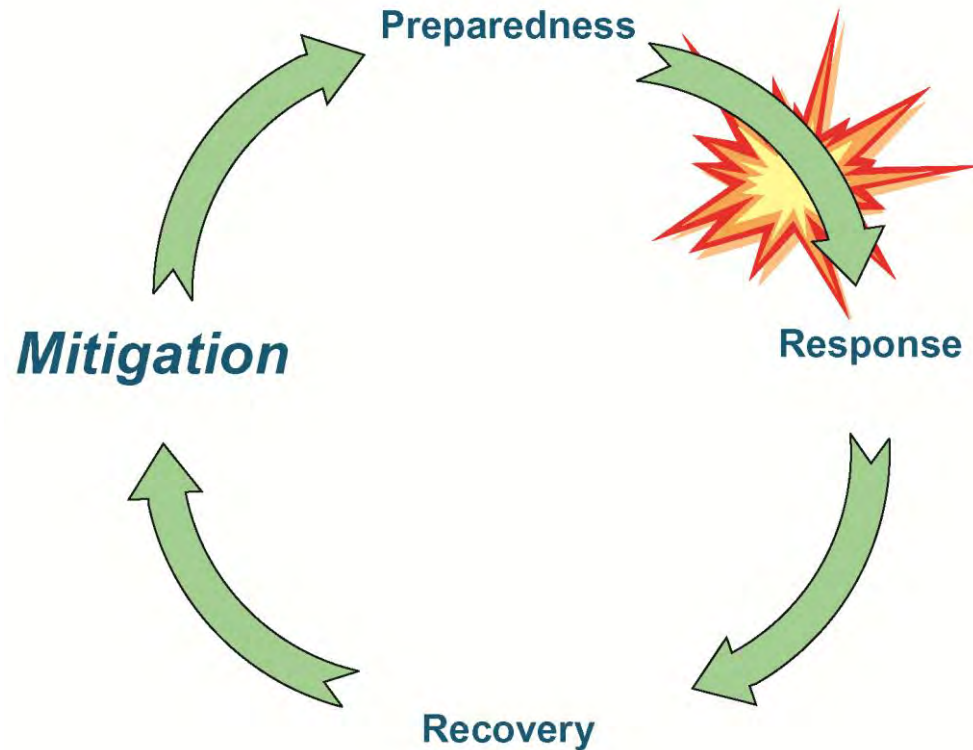
# What is Hazard Mitigation?

“Mitigation”:

*Sustained actions taken to reduce or eliminate long-term risk to life and property from a hazard event*

*or...*

*Any action taken to reduce future disaster losses*





# Why Are We Preparing the Plan?

- To reduce our losses from natural and human-caused hazards
- To make our communities more “disaster-resistant”
- To maintain our eligibility for federal mitigation grant funding
  - Hazard Mitigation Grant Program (HMGP)
  - Hazard Mitigation Assistance (HMA) Grant Program
    - Pre-Disaster Mitigation (PDM) Program
    - Flood Mitigation Assistance (FMA) Program
    - Repetitive Flood Claims (RFC) Program

***A Local Mitigation Plan demonstrates a jurisdiction’s commitment to reducing risks from hazards and serves as a guide for decision makers as they commit resources to minimize the effects of hazards.***



# What Does an All-Hazards Plan Provide?

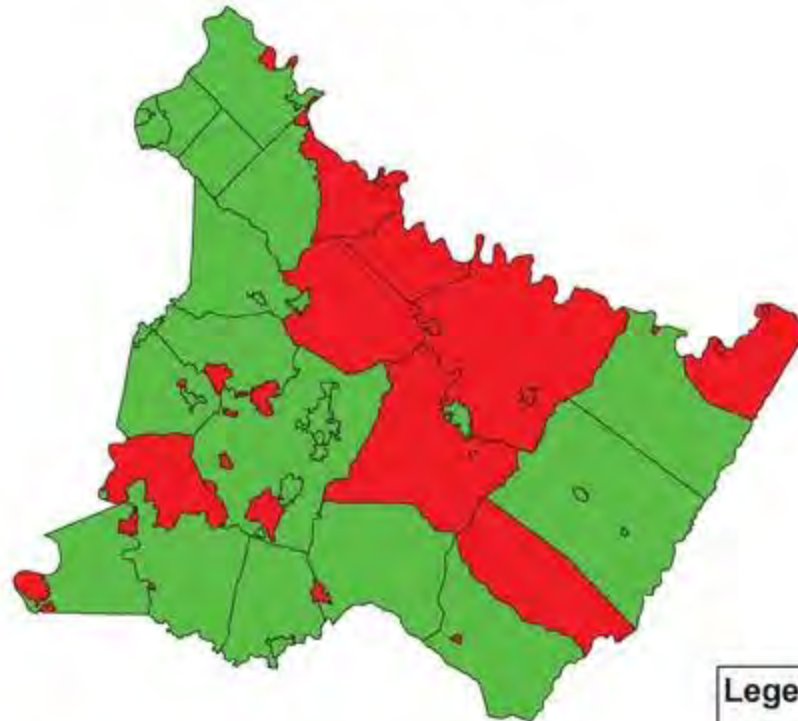
- A comprehensive, factual assessment of risk to support a strategy to manage risk to all hazards
- A detailed action plan the county and communities will implement to reduce risks to natural and human-caused hazards
- Coordination of mitigation efforts with other local, county, regional, state and federal entities
- Access to federal mitigation grant funding

**“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).**



# Westmoreland Participation

Communities that have adopted County's Hazard Mitigation Plan  
As of 10/10/2013



**Legend**

**Adoption of County HMP**

- Has NOT adopted
- Has Adopted



# Who Must Have a “Plan” under Federal Law?

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- All “local governments”
  - States – Pennsylvania has a “Standard” Plan
  - Counties (for county assets)
  - Municipalities (cities, towns, villages)



# The Westmoreland County Plan and Update

- Westmoreland County and 53 of the 65 municipalities developed and adopted the original HMP.
- The Final Plan was approved by FEMA in 2009.
- By regulation, local HMPs must be formally updated, approved by FEMA, and adopted by jurisdictions every 5 years.
- Westmoreland County Department of Public Safety and the Department of Planning and Development are facilitating this planning process, with the support and direction of the Westmoreland County Hazard Mitigation Working Group and Tetra Tech.



# Why is Updating the Plan Important?

- HMPs are intended to guide and direct risk-reduction activities – thus they need to stay relevant.
- Our exposure and vulnerability to hazard risk continually changes:
  - As nature (or human impacts on nature) changes
  - As human actions increase or decrease vulnerability
  - As our capabilities to manage risk change (knowledge about risk, funding, etc.)
- How we propose to continue to manage hazard risk at the county, local and personal levels continually needs to be monitored, assessed and adjusted.
- Mitigation Strategies (projects, initiatives, etc.) need to address our risk as we now know it.



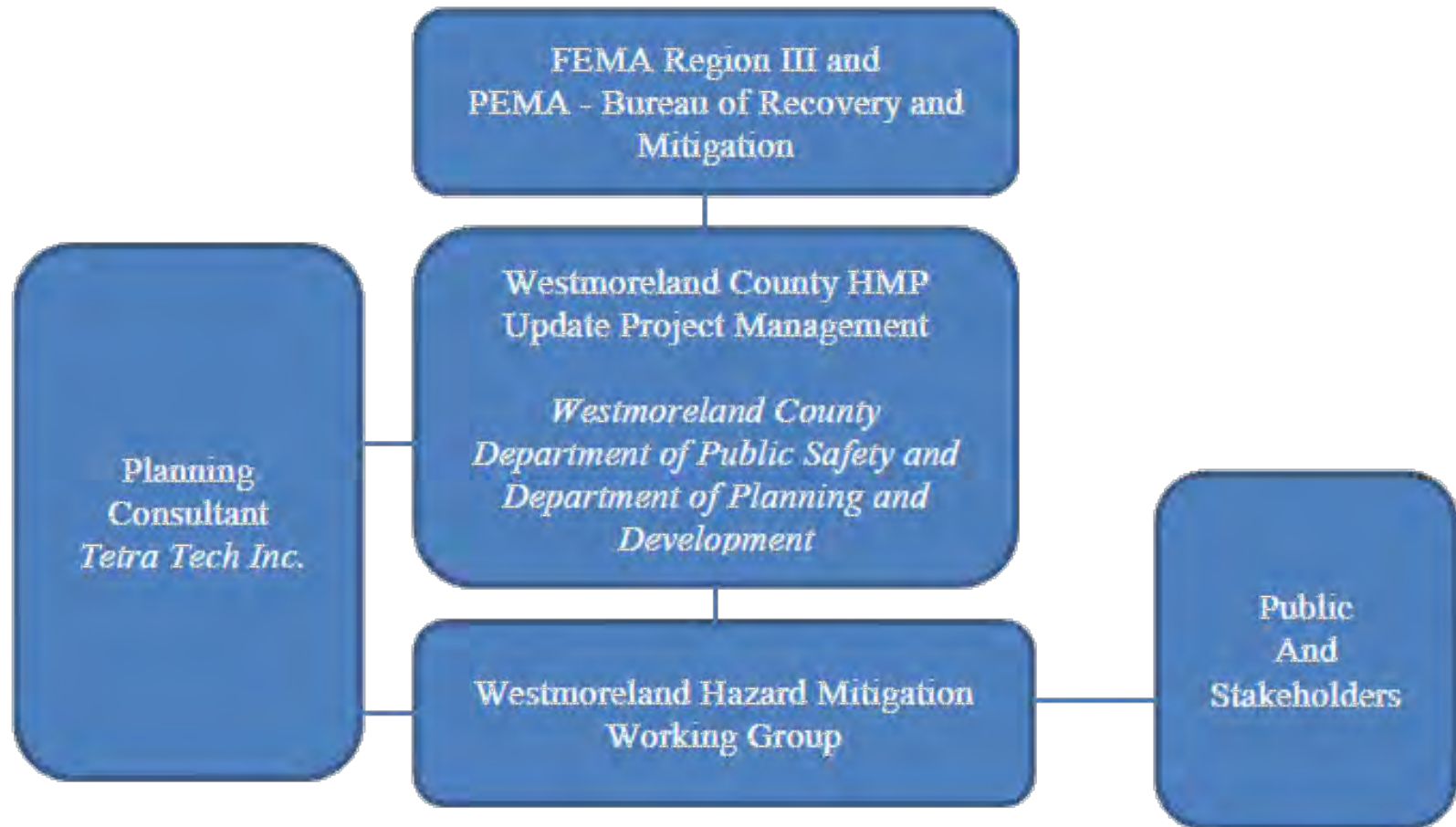


# HMP Update Process

- **Organize Resources**
  - **Assess the Risk**
  - Review and Update the HMP
  - Develop Procedures for Plan Implementation, Monitoring and Update
  - PEMA/FEMA Region 3 Approval
  - Adopt the Plan
- Engage a Wide Range of “Stakeholders”
    - Federal, State, Regional and Local Agencies
    - Business and Civic Groups
    - Academic Institutions
    - Other “Local Governments”
    - The Public



# Organize the Resources



# Assess the Risk

- Identify the Hazards of Concern (HOC)
  - Profile the HOC
    - Where do they occur?
    - How often?
    - Magnitude?
    - Historic Events and Losses
  - Identify What is at Risk (inventory)
  - Conduct a Risk Assessment
    - Exposure
    - Vulnerability



# Assess the Risk: Hazards of Concern Identification

---

- **Hazards of Concern** – Natural and human-caused hazards that pose significant risk to the county and we can address through mitigation rather than only through preparedness, response and recovery.
- Each municipality has differing risk to the HOCs.



# Hazards of Concern

---

- Natural Hazards of Concern

- Avalanche
- Drought
- Earthquake
- Extreme Temperature
- Flood
- Hailstorm
- Hurricane, Tropical Storm
- Landslide
- Lightning Strike
- Radon Exposure
- Tornado/Windstorm
- Wildfire
- Winter Storm



# Hazards of Concern (continued)

---

- Human-Caused Hazards of Concern
  - Dam Failure
  - Environmental Hazards and Explosions
  - Major Structural Fires
  - Nuclear
  - Subsidence / Sinkhole
  - Terrorism
  - Transportation Accident
  - Utility Interruption





# Assess the Risk – Hazard Profiling

- Hazards are profiled (characterized) according to:
  - Overview of Hazard
  - Location and Extent
  - Range of Magnitude
  - Past Occurrence
  - Future Occurrence
  - Vulnerability Assessment
    - Impact on Life, Health and Safety
    - Impact on General Building Stock, Critical Facilities and Economy
    - Future Growth and Development
    - Effect of Climate Change on Vulnerability



# Westmoreland Hazard Profiles

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- Hazards profiles will be accessible to the public for review through the Project Website for the Westmoreland County Hazards Mitigation Plan Update....

[http://www.westmorelandhmp.com/index.php?option=com\\_content&view=article&id=33&Itemid=159&lang=en](http://www.westmorelandhmp.com/index.php?option=com_content&view=article&id=33&Itemid=159&lang=en)



# Risk Ranking

- Risk Factor (RF) Methodology
  - Probability
  - Impact
  - Spatial Extent
  - Warning Time
  - Duration

## *Example Equation*

$$\text{RF Value} = [(Probability \times .30) + (Impact \times .30) + (Spatial \text{ Extent} \times .20) + (Warning \text{ Time} \times .10) + (Duration \times .10)]$$



# Risk Ranking for Westmoreland

---

## ■ High Risk

- Flood
- Winter Storm
- Tornadoes and Windstorms
- Drought
- Utility Interruption
- Subsidence and Sinkholes
- Environmental Hazards

## ■ Moderate Risk

- Extreme Temperature
- Radon Exposure
- Hailstorm
- Wildfire
- Hurricanes and Tropical Storms
- Major Structural Fires
- Transportation Accidents



# Risk Ranking for Westmoreland (cont.)

---

- Low Risk
  - Earthquake
  - Lightning Strike
  - Avalanche
  - Landslide
  - Terrorism
  - Dam Failure
  - Nuclear Incidents



---

# What is Next in the Planning Process?





# Update the Hazard Mitigation Goals and Objectives

---

- **Goals:** General guidelines that state what we want to achieve. Should be consistent with the State goals and other local goals.
  - Example: “Protect existing properties.”
- **Objectives:** Define strategies or implementation steps to attain a stated goal.
  - Example: “Enact or enforce regulatory measures that ensure new development will not increase flood threats to existing properties.”
- **Actions:** Specific activities that will achieve our goals and objectives while managing hazard risk.



# Identification and Analysis of Mitigation Actions

- Mitigation actions need to be realistic, achievable and action-oriented.
- Can include both regional actions, as well as jurisdiction-specific.
- Can address both public and private property.
- For each proposed mitigation action, the following will be identified:
  - Implementation timeline
  - Estimated cost and benefits (avoided losses)
  - Potential funding sources
  - Lead agency or department
  - Supporting agencies



# Mitigation Actions

- **Prevention.** Measures such as planning and zoning, open space preservation, land development regulations, building codes, storm water management
- **Property Protection.** Measures such as acquisition, relocation, storm shutters, rebuilding, barriers, flood-proofing, insurance, and structural retrofits for high winds
- **Public Education and Awareness.** Measures such as outreach projects, real estate disclosure, hazard information centers, technical assistance



# Mitigation Actions (continued)

- **Natural Resource Protection.** Measures such as erosion and sediment control, stream corridor protection, vegetative management, and wetlands preservation
- **Emergency Services.** Measures such as hazard threat recognition, hazard warning systems, emergency response, protection of critical facilities, and health and safety maintenance
- **Structural Projects.** Measures such as dams, levees, seawalls, bulkheads, retaining walls, channel modifications, storm sewers, and retrofitted buildings and elevated roadways



# Integration with Other Plans and Programs

- The Hazard Mitigation Plan should complement and support other plans and regulatory mechanisms
  - Comprehensive Emergency Management Plans (CEMP)
  - Comprehensive / Master Plans (regional and local) –plans that guide and direct land use and development
  - Stormwater Management Plans (flood problem areas and potential solutions identified)
  - Capital Improvement Plans (some of these projects are grant eligible)



# Plan Implementation

---

- Your mitigation strategy section provides a “blueprint” to follow for progressively reducing your community’s hazard risk.
- Mitigation grant opportunities open regularly:
  - The annual HMA grant window opens in June of each year.
  - HMGP funding comes in the wake of Declared Disasters in the State.
- County Hazard Mitigation Coordinators will continue to alert planning partners of grant opportunities as they arise, including all guidance and instructions provided by PEMA and FEMA.





# How to Stay Involved in the Planning Process

- Visit the Westmoreland County Hazard Mitigation Plan website ([www.westmorelandhmp.com](http://www.westmorelandhmp.com))
  - Learn more about the planning process and upcoming meetings
  - Review and provide comments on draft sections of the plan
- Complete Surveys
  - [Citizen Hazard Preparedness and Mitigation Survey](#)
- Assist with Mitigation Strategy Development
  - Assist with identifying mitigation projects and initiatives to reduce hazard risk
  - If your property is a candidate for mitigation (e.g. elevation, acquisition), please contact your municipal mitigation planning point-of-contact



# How to Stay Involved in the Planning Process

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- Complete Municipal “Handouts”
  - Intent to Participate
  - Contact and Municipal Information Sheet
  - Capability Assessment Survey
  - Evaluation of Identified Hazards and Risk
  - Project Capture Worksheet





**TETRA TECH**

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## **Tetra Tech Project Contact:**

**Caitlin Kelly, MSEM, MEP**

**Tetra Tech, Inc.**

**240 Continental Drive, Suite 200**

**Newark, DE 19713**

**Email: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)**

**Phone: (302) 283-2218**

**Fax: (302) 454-5988**



# FEMA

## Program Information

# Mitigation



### Hazard Mitigation Assistance

The Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA) programs present a critical opportunity to reduce the risk to individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds.

### A Common Goal

While the statutory origins of the programs differ, all share the common goal of reducing the risk of loss of life and property due to natural hazards.

### Funding Disaster Recovery Efforts

The Hazard Mitigation Grant Program (HMGP) may provide funds to States, Territories, Indian Tribal governments, local governments, and eligible private non-profits following a Presidential major disaster declaration.

## The Unified Hazard Mitigation Assistance Grant Programs

**The Hazard Mitigation Grant Program (HMGP)** is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key



purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration.

**The Pre-Disaster Mitigation (PDM)** program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments, and local communities in



implementing a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future disasters.

**The Flood Mitigation Assistance (FMA)** program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP).



**The Repetitive Flood Claims (RFC)** program is authorized by Section 1323 of the NFIA, 42 U.S.C. 4030, with the goal of reducing flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund (NFIF) in the shortest period of time.



**The Severe Repetitive Loss (SRL)** program is authorized by Section 1361A of the NFIA, 42 U.S.C. 4102a, with the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.



# Program Comparisons

## Cost Sharing

In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 25 percent of eligible costs are derived from non-Federal sources.

The table below outlines the Federal and State cost share requirements.

### COST SHARE REQUIREMENTS

Programs	Mitigation Activity Grant (Percent of Federal/ Non-Federal Share)
<b>HMGP</b>	75/25
<b>PDM</b>	75/25
<b>PDM</b> (subgrantee is small impoverished community)	90/10
<b>PDM</b> (Tribal grantee is small impoverished community)	90/10
<b>FMA</b>	75/25
<b>FMA</b> (severe repetitive loss property with Repetitive Loss Strategy)	90/10
<b>RFC</b>	100/0
<b>SRL</b>	75/25
<b>SRL</b> (with Repetitive Loss Strategy)	90/10

## Eligible Applicants and Subapplicants

States, Territories, and Indian Tribal governments are eligible HMA Applicants. Each State, Territory, and Indian Tribal government shall designate one agency to serve as the Applicant for each HMA program. All interested subapplicants must apply to the Applicant.

The table below identifies, in general, eligible subapplicants.

### ELIGIBLE SUBAPPLICANTS

Subapplicants	HMGP	PDM	FMA	RFC	SRL
State agencies	✓	✓	✓	✓	✓
Indian Tribal governments	✓	✓	✓	✓	✓
Local governments/communities	✓	✓	✓	✓	✓
Private non-profit organizations (PNPs)	✓				

✓ = Subapplicant is eligible for program funding

Individuals and businesses are not eligible to apply for HMA funds, however, an eligible subapplicant may apply for funding to mitigate private structures. RFC funds are only available to subapplicants who cannot meet the cost share requirements of the FMA program.

### Available Funding

PDM, FMA, RFC, and SRL are subject to the availability of appropriations funding, as well as any directive or restriction made with respect to such funds.

HMGP funding depends on Federal assistance provided for disaster recovery.

### General Requirements

All mitigation projects must be cost-effective, be both engineering and technically feasible, and meet Environmental Planning and Historic Preservation requirements in accordance with HMA Unified Guidance. In addition, all mitigation activities must adhere to all relevant statutes, regulations, and requirements including other applicable Federal, State, Indian Tribal, and local laws, implementing regulations, and Executive Orders.

**All Applicants and subapplicants must have hazard mitigation plans that meet the requirements of 44 CFR Part 201.**



## Eligible Activities

The table below summarizes eligible activities that may be funded by HMA programs. Detailed descriptions of these activities can be found in the HMA Unified Guidance.

### ELIGIBLE ACTIVITIES

Mitigation Activities	HMGP	PDM	FMA	RFC	SRL
<b>1. Mitigation Projects</b>	✓	✓	✓	✓	✓
Property Acquisition and Structure Demolition or Relocation	✓	✓	✓	✓	✓
Structure Elevation	✓	✓	✓	✓	✓
Mitigation Reconstruction					✓
Dry Floodproofing of Historic Residential Structures	✓	✓	✓	✓	✓
Dry Floodproofing of Non-Residential Structures	✓	✓	✓	✓	
Minor Localized Flood Reduction Projects	✓	✓	✓	✓	✓
Structural Retrofitting of Existing Buildings	✓	✓			
Non-Structural Retrofitting of Existing Buildings and Facilities	✓	✓			
Safe Room Construction	✓	✓			
Infrastructure Retrofit	✓	✓			
Soil Stabilization	✓	✓			
Wildfire Mitigation	✓	✓			
Post-Disaster Code Enforcement	✓				
5% Initiative Projects	✓				
<b>2. Hazard Mitigation Planning</b>	✓	✓	✓		
<b>3. Management Costs</b>	✓	✓	✓	✓	✓

✓ = Mitigation activity is eligible for program funding

## Management Costs

**For HMGP only:** The Grantee may request up to 4.89 percent of the HMGP allocation for management costs. The Grantee is responsible for determining the amount, if any, of funds that will be passed through to the subgrantee(s) for their management costs.

**Applicants for PDM, FMA, RFC, or SRL** may apply for a maximum of 10 percent of the total funds requested in their grant application budget (Federal and non-Federal shares) for management costs to support the project and planning subapplications included as part of their grant application.

**Subapplicants for PDM, FMA, RFC, or SRL** may apply for a maximum of 5 percent of the total funds requested in a subapplication for management costs.

## National Flood Insurance Program (NFIP) Participation

There are a number of ways that HMA eligibility is related to the NFIP:



**SUBAPPLICANT ELIGIBILITY:** All subapplicants for FMA, RFC, or SRL must currently be participating in the NFIP, and not withdrawn or suspended, to be eligible to apply for grant funds. Certain non-participating political subdivisions (i.e., regional flood control districts or county governments) may apply and act as subgrantee on behalf of the NFIP-participating community in areas where the political subdivision provides zoning and building code enforcement or planning and community development professional services for that community.

**PROJECT ELIGIBILITY:** HMGP and PDM mitigation project subapplications for projects sited within a Special Flood Hazard Area (SFHA) are eligible only if the jurisdiction in which the project is located is participating in the NFIP. There is no NFIP participation requirement for HMGP and PDM project subapplications located outside of the SFHA.

**PROPERTY ELIGIBILITY:** Properties included in a project subapplication for FMA, RFC, and SRL funding must be NFIP-insured at the time of the application submittal. Flood insurance must be maintained at least through completion of the mitigation activity.



## Application Process

Applications for HMGP are processed through the National Emergency Management Information System (NEMIS). Applicants use the Application Development Module of NEMIS, which enables each Applicant to create project applications and submit them to the appropriate FEMA Region in digital format for the relevant disaster.

Applications for PDM, FMA, RFC, and SRL are processed through a web-based, electronic grants management system (eGrants), which encompasses the entire grant application process. The eGrants system allows Applicants and subapplicants to apply for and manage their mitigation grant application processes electronically. Applicants and subapplicants can access eGrants at <https://portal.fema.gov>.

## Application Deadline

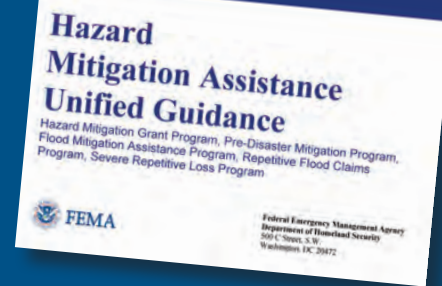
The PDM, FMA, RFC, and SRL application period is from early June through early December. Applicants must submit a grant application to FEMA through the eGrants system. The HMGP application deadline is 12 months after the disaster declaration date and is not part of the annual application period. Details can be found in the HMA Unified Guidance.

## FEMA Review and Selection

All subapplications will be reviewed for eligibility and completeness, cost-effectiveness, engineering feasibility and effectiveness, and for Environmental Planning and Historical Preservation compliance. Subapplications that do not pass these reviews will not be considered for funding. FEMA will notify Applicants of the status of their subapplications and will work with Applicants on subapplications identified for further review.



Details about the HMA Grant Application process can be found in the Hazard Mitigation Assistance Unified Guidance, which is available at [www.fema.gov/government/grant/hma/index.shtm](http://www.fema.gov/government/grant/hma/index.shtm)



## GovDelivery Notifications

Stay up-to-date on the HMA Grant Programs by subscribing to GovDelivery notifications. Have updates delivered to an e-mail address or mobile device. To learn more, visit [www.fema.gov](http://www.fema.gov)

## Contact Information

HMA Helpline: Tel 866-222-3580, or e-mail [hmagrantshelpline@dhs.gov](mailto:hmagrantshelpline@dhs.gov)

Contact information for FEMA Regional Offices is provided at [www.fema.gov/about/contact/regions.shtm](http://www.fema.gov/about/contact/regions.shtm)

Contact information for each State Hazard Mitigation Officer (SHMO) is provided at [www.fema.gov/about/contact/shmo.shtm](http://www.fema.gov/about/contact/shmo.shtm)



# FEMA

Date

Mr. Christopher Tantlinger  
HAZMAT Coordinator, Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601

Subject: Westmoreland County Hazard Mitigation Plan Update  
Authorization and Letter of Intent to Participate - [Municipality Name]

Dear Mr. Tantlinger:

Per your letter, dated [ ], the [Municipality Name], is committed to participating in the Westmoreland County Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Municipality Name:

1. Authorizes the Westmoreland County Hazard Mitigation Working Group (“Working Group”), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of municipal participation (a.k.a. the Planning Partner Expectations), specifically:

Execute and return this “Authorization and Acknowledgement” letter to the Westmoreland County Department of Public Safety, attention: Mr. Christopher Tantlinger.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Working Group selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (~ 3 meetings over 6-9 months, including a Kick-Off Meeting and a Mitigation Strategy Workshop meeting).
- Provide data and information about your community as requested by the Working Group or the contract consultant information, including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on your municipal website with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)

- Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
  - Completing data and information collection survey forms in a timely manner.
  - Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to your community.
  - Involve your local NFIP Floodplain Administrator in the planning process.
  - Review draft Plan sections when requested and provide comment and input as appropriate.
  - Adopt the Plan by resolution of their governing body after FEMA conditional approval.
  - Periodically provide the Working Group with summary or municipal staff and volunteer labor spent on the planning process.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at municipal Planning Committee meetings, and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: \_\_\_\_\_ Position/Department: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email Address: \_\_\_\_\_

Alternate/Secondary POC: \_\_\_\_\_ Position/Department: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email Address: \_\_\_\_\_

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: \_\_\_\_\_ Position/Department: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email Address: \_\_\_\_\_

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Working Group will result in our municipality being excluded from the planning process.

Sincerely,

**WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE  
CONTACT AND MUNICIPAL INFORMATION SHEET**

Please complete and forward to (or call with questions!): Caitlin Kelly  
Tetra Tech Inc., 240 Continental Drive Suite 200, Newark, DE 19713  
302-283-2218 Fax: 302-454-5988  
E-mail: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

Date: \_\_\_\_\_

Municipality/Organization: \_\_\_\_\_

County: \_\_\_\_\_

Community/Organization contact(s) for Hazard Mitigation Planning (please list at least one):  
\*\*\*This individual(s) will receive correspondence such as meeting notifications and other updates and may be asked to provide additional information during the hazard mitigation planning process.\*\*\*

Contact #1 \_\_\_\_\_ Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Contact #2 (optional) \_\_\_\_\_ Check here if you want access to the project SharePoint site

Name: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_



E-mail: \_\_\_\_\_

**What is the best way to provide the designated contact with notifications of upcoming meetings and other important information?**

\_\_\_\_\_ E-mail

\_\_\_\_\_ Regular Mail

\_\_\_\_\_ Telephone



**Please identify any hazard problems and problem areas in your community. Where have you suffered damages/losses to natural hazards (structures, infrastructure, injury/loss of life)?**

**Please identify any mitigation projects/activities that have been completed, are planned, or ongoing in your community? (Examples: elevation or acquisition of floodprone structures, drainage improvements, levees or other flood control projects, planning or regulatory - ordinances)**

**Please identify any mitigation projects/activities that you think are appropriate to address the hazards your community faces.**





### Appendix 3: Capability Assessment Survey

Jurisdiction: \_\_\_\_\_ Point of Contact Name and Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate it's estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

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							



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				
Zoning Regulations							
Subdivision Regulations							
Comprehensive Land Use Plan (or General, Master or Growth Mgt. Plan)							
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							

**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an “X” in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

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)				
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				

**3. Fiscal Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources *for hazard mitigation purposes* (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

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				

- 4. Community Political Capability:** Political capability in this instance is being measured by the degree to which local political leadership (including appointed boards) is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with some opposition. Examples may include guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum State or Federal requirements (e.g., building codes, floodplain management, etc.). Rate the jurisdiction’s political capability to enact policies and programs that reduce hazard vulnerabilities on a scale from 0 to 5. Generally, a higher the score corresponds to a higher degree of community political capability.



**5-Very Willing**

**3-Moderately Willing**

**0-Unwilling to Adopt Policies/Programs**

**Score: \_\_\_\_\_**

**5. Self-Assessment of Capability:** Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix in **Appendix 4**.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory Capability			
Administrative and Technical Capability			
Fiscal Capability			
Community Political Capability			
Community Resiliency Capability			



## Evaluation of Identified Hazards and Risk

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Jurisdiction: \_\_\_\_\_

### PART I

<b>Identified Hazards 2009 HMP</b>	<b>How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community?</b>  <i>NC = No Change; I = Increase; D = Decrease</i>  <i>(Please provide an explanation for any hazards marked I or D in the "Additional Comments" column)</i>	<b>Additional Comments</b>
Dam Failures		
Droughts and Water Supply Deficiencies		
Earthquakes		
Energy Emergencies		
Fire		
Fixed Nuclear Facility		
Floods		
Hazardous Materials		
Landslides		
Nuclear Attack		
Subsidence, Sinkhole		
Terrorism		
Tornadoes, Hurricanes Wind storms		
Transportation Accidents		
Winter Storms		

## PART II

### Other Hazards:

Do any of these hazards, not previously profiled in the County's hazard mitigation plan; have the potential to affect your municipality significantly? (If so, please check the box)

#### *Natural*

- |  |  |
|--|--|
| <input type="checkbox"/> Avalanche/Glacier                     | <input type="checkbox"/> Lighting Strike                 |
| <input type="checkbox"/> Coastal Erosion                       | <input type="checkbox"/> Pandemic and Infectious Disease |
| <input type="checkbox"/> Dust, Sand Storm                      | <input type="checkbox"/> Radon Exposure                  |
| <input type="checkbox"/> Expansive Soils                       | <input type="checkbox"/> Tsunami                         |
| <input type="checkbox"/> Extreme Temperature                   | <input type="checkbox"/> Volcano                         |
| <input type="checkbox"/> Hailstorm                             | <input type="checkbox"/> Wildfire                        |
| <input type="checkbox"/> Hurricane, Tropical Storm, Nor'easter |  |
| <input type="checkbox"/> Invasive Species                      |  |

#### *Human-Caused*

- |   |  |
|---|--|
| <input type="checkbox"/> Building or Structure Collapse | <input type="checkbox"/> Levee Failure             |
| <input type="checkbox"/> Civil Disturbance              | <input type="checkbox"/> Urban Explosion           |
| <input type="checkbox"/> Disorientation                 | <input type="checkbox"/> Utility Interruption      |
| <input type="checkbox"/> Drowning                       | <input type="checkbox"/> War and Criminal Activity |
| <input type="checkbox"/> Environmental Hazards          |  |

**Other Comments:**

A large, empty rectangular box with a black border, intended for providing additional comments or feedback.



## Mitigation Project Capture Sheet

For the purposes of the 2014 Westmoreland Hazard Mitigation Plan update the Hazard Mitigation Working Group would like to capture any mitigation projects that the municipality is either currently working on or would like to pursue in the. These projects will be documented in the HMP so that mitigation grant funding can be applied for to support project costs. Please complete one sheet per project with as much detail as possible, using the example below and footnotes as a guide.

Please forward completed sheets to:  
Chris Tantlinger, HAZMAT Coordinator  
Westmoreland County Department of Public Safety  
911 Public Safety Road  
Greensburg, PA 15601  
Phone: 724-600-7349  
Fax: 724-600-7388  
Email: [CTANTLIN@co.westmoreland.pa.us](mailto:CTANTLIN@co.westmoreland.pa.us)

or

Caitlin Kelly, MSEM, MEP  
Tetra Tech EM, Inc.; 240 Continental Drive Suite 200, Newark, DE 19713  
Phone: (302) 283-2218  
Fax: (302) 454.5988  
Email: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)

An example completed hazard mitigation project capture sheet and a blank mitigation project capture sheet are provided on the following pages.



## Example: Completed Mitigation Project Capture Sheet

<b>Contact Information:</b> <i>Name:</i> Bob Jones <i>Title:</i> Director, Engineering <i>Department/Agency:</i> Town Engineering Department <i>Telephone:</i> 555-555-1234	
<b>Project Location:</b> ABC culvert along Swift River at the intersection of Smith Street and Jones Road in Floodville.	
<b>Project Description</b> <i>(Please include what will be done, what hazards it will mitigate, how it will mitigate those hazards and what losses will be reduced):</i>  Increase the structural stability and drainage capacity of the culvert along Swift River on Jones Road in Floodville to alleviate stormwater flooding. The increased capacity will prevent excess water from undermining the road and flooding the six residential properties along this street. Jones Road is a main artery through the area and is identified as a critical evacuation and response route.	
<b>Lead Agency:</b> Town Engineering	<b>Support Agencies:</b> Town DPW, Westmoreland County Roads Dep't., NYSOEM
<b>Project Cost:</b> High	<b>Funding Source</b> <i>(if known):</i> FEMA PDM with local Capital Improvements Budget for 25% cost share
<b>Timeline:</b> Short	

### Costs:

If an estimated cost is known, please provide or use the following ranges:

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

If costs have not been estimated, please use the following:

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 reappropriation 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.

### Funding Source:

Please identify the anticipated funding source, which could be “Grant funding with local cost share”.

### Timeline:

Short = 1 to 5 years.

Long Term = 5 years or greater.

OG = On-going program.

DOF = Depending on funding.



## Mitigation Project Capture Sheet

<b>Contact Information:</b> <i>Name:</i> <i>Title:</i> <i>Department/Agency:</i> <i>Telephone:</i>	
<b>Project Location:</b>	
<b>Project Description</b> <i>(Please include what will be done, what hazards it will mitigate, how it will mitigate those hazards and what losses will be reduced:</i>	
<b>Lead Agency:</b>	<b>Support Agencies:</b>
<b>Project Cost:</b>	<b>Funding Source</b> <i>(if known):</i>
<b>Timeline:</b>	

### Costs:

If an estimated cost is known, please provide or use the following ranges:

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

If costs have not been estimated, please use the following:

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 reappropriation 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.

### Funding Source:

Please identify the anticipated funding source, which could be “Grant funding with local cost share”.

### Timeline:

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





## Westmoreland County Press Release

# Westmoreland County Stakeholder and Public Mitigation Strategy Workshop for the All-Hazards Mitigation Plan

Westmoreland County's Department of Public Safety invites the public to participate in updating the countywide Hazard Mitigation Plan (HMP). The County will hold its next Hazard Mitigation Planning Workshop on Wednesday, April 30, 2014 from 9:00am – 12:00pm. The workshop will be held at the Westmoreland County Court House Annex, in the Senior Judges Court Room on the 4<sup>th</sup> Floor. Residents, local officials, industry representatives, educators, and others are encouraged to attend. Parking is available at the Robert Bell Parking Garage on Otterman Street, or metered lots are available: <http://www.co.westmoreland.pa.us/index.aspx?NID=317>.

Background information about the plan is now on the Westmoreland County Hazard Mitigation Planning website at: [www.westmorelandhmp.com](http://www.westmorelandhmp.com). This site includes an [online hazard awareness survey](#), and will include sections of the Draft Plan as it becomes available. The public is encouraged to visit the site, take the online survey, review the Draft Plan and provide input on the HMP planning process.

Westmoreland County is in the process of updating its 2009 All-Hazards Mitigation Plan to ensure eligibility for future mitigation funding from the Federal Emergency Management Agency (FEMA). This detailed plan addresses a variety of potential natural and non-natural hazards that could affect some or all of the county's residents.

“The update of this plan will allow the county and its participating municipalities to continue be eligible for future mitigation funding from FEMA,” said Hazard Mitigation Officer, Chris Tantlinger. “We're very eager to get the public's input to help us create a detailed plan that will address a variety of potential hazards that could affect some or all of our citizens.”

For more information, contact Chris Tantlinger at the Westmoreland County Department of Public Safety at 724-600-7349 or [CTANTLIN@co.westmoreland.pa.us](mailto:CTANTLIN@co.westmoreland.pa.us)



## HAZARD MITIGATION PLAN UPDATE WESTMORELAND COUNTY, PENNSYLVANIA

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### Westmoreland County Stakeholder & Public Outreach Mitigation Strategy Workshop: Wednesday, April 30, 2014 at 9:00am – 12:00pm

- Welcoming Remarks and Introductions: *Westmoreland County Official*
- Westmoreland County Hazards Mitigation Plan Update Presentation
  - What is a Hazard Mitigation Plan?
  - Why we are we updating the 2009 Plan?
  - What having an approved plan does and does not gain you?
  - What goes into the planning process?
    1. Organize the Resources
    2. Assess the Risk
    3. Review and Update the HMP
    4. Develop Procedures for Plan Implementation, Monitoring and Update
    5. PEMA/FEMA Region 3 Approval
    6. Adopt the Plan
  - Update of the Hazard Mitigation Strategy
    1. Hazard Mitigation Goals and Objectives
    2. Hazard Mitigation Actions
    3. Draft Hazard Mitigation Strategy
    4. Mitigation Funding
  - What will be expected of each participant?
- Public Outreach
  - Westmoreland County HMP project site ([www.westmorelandhmp.com](http://www.westmorelandhmp.com))
  - Citizen Preparedness and Mitigation Survey
- Stakeholder Information and Data Collection
  - Intent to Participate
  - Evaluation of Identified Hazards and Risk
  - Capability Assessment
  - Mitigation Project Capture Worksheet
- Questions and Answers



## WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE STAKEHOLDER & PUBLIC MEETING

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### Welcome to the Stakeholder & Public Outreach Mitigation Strategy Workshop for the 2014 Westmoreland County Hazard Mitigation Plan Update

Please visit the Westmoreland County Hazard Mitigation Plan Update Website by going to [www.westmorelandhmp.com](http://www.westmorelandhmp.com) and selecting the links on the left hand side, to:

- Learn more about hazard mitigation and this planning process
- Take the Online Citizen Hazard Preparedness and Mitigation Survey
- Review and provide input on draft sections of the Plan Update document, as they become available

#### Project Contacts

##### **Westmoreland County:**

Christopher R. Tantlinger  
HAZMAT Coordinator/Hazard Mitigation Officer  
Westmoreland County Department of Public Safety  
Phone: 724-600-7349  
Email: CTANTLIN@co.westmoreland.pa.us

##### **Contractor:**

Caitlin Kelly, MSEM, MEP  
Tetra Tech, Inc.; 240 Continental Drive Suite 200, Newark, DE 19173  
Phone: (302) 283-2218  
Email: caitlin.kelly@tetrattech.com





# WESTMORELAND COUNTY HAZARD MITIGATION PLAN UPDATE PUBLIC MEETING

Meeting Date: Wednesday, April 30, 2014 - 9:00 am  
Location: Westmoreland County Courthouse, Greensburg, PA

Name	Municipality	Phone Number (opt.)	E-mail (opt.)
Jim Laffey	Tetra Tech	(412)921-8678	jim.laffey@tetratech.com
Clyde Snyder	Tetra Tech	412-921-8904	Clyde.Snyder@tetratech.com
Armon Pologruto	Westmoreland County	724.850.6880	APOLOGRUTO@CO.WESTMORELAND.PA.US
Chris Tantlinger	WCOPS	724 600 7349	chantlin@co.westmoreland.pa.us
Dan Stevens	WCOPS	724 600-7305	dstevens@co.westmoreland.pa.us
Darlene Bracken	PENA	724-357-0104	dbracken@pa.gov
Chris Bova	Westmoreland County Planning	724.830.3995	Cbova@co.westmoreland.pa.us



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# Hazard Mitigation Plan 2014 Update



# What is Hazard Mitigation?

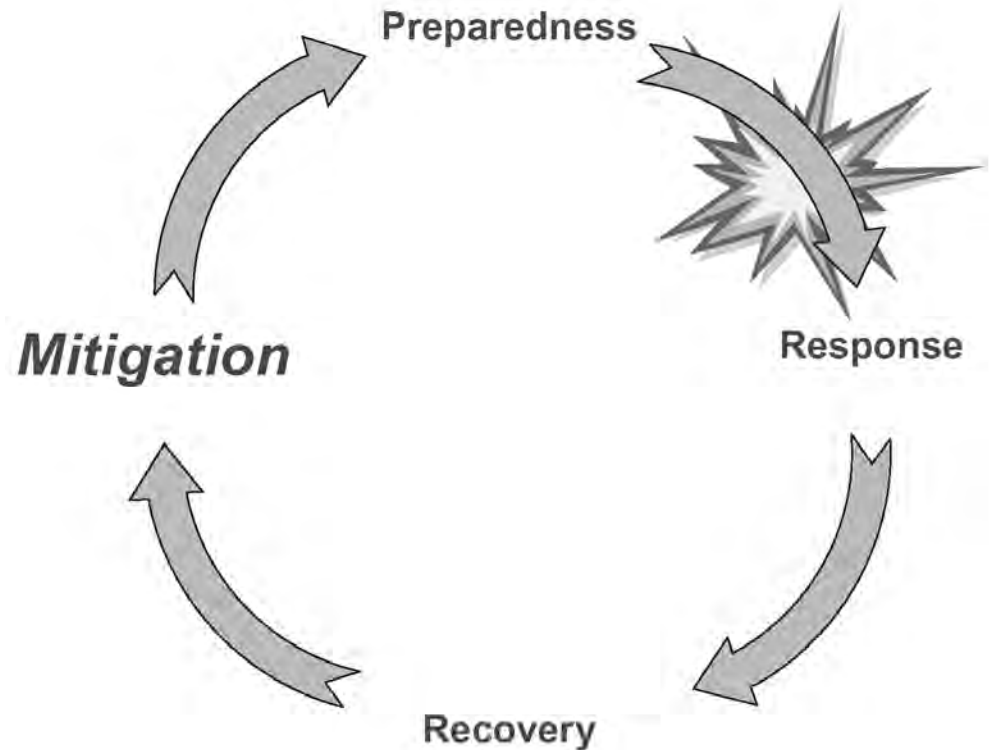
---

**“Mitigation”:**

*Sustained actions taken to reduce or eliminate long-term risk to life and property from a hazard event*

**or...**

*Any action taken to reduce future disaster losses*





# Why Are We Preparing the Plan?

---

- To reduce our losses from natural and human-caused hazards
- To make our communities more “disaster-resistant”
- To maintain our eligibility for federal mitigation grant funding
  - Hazard Mitigation Grant Program (HMGP)
  - Hazard Mitigation Assistance (HMA) Grant Program
    - Pre-Disaster Mitigation (PDM) Program
    - Flood Mitigation Assistance (FMA) Program
    - Repetitive Flood Claims (RFC) Program

***A Local Mitigation Plan demonstrates a jurisdiction’s commitment to reducing risks from hazards and serves as a guide for decision makers as they commit resources to minimize the effects of hazards.***



# What Does an All-Hazards Plan Provide?

---

- A comprehensive, factual assessment of risk to support a strategy to manage risk to all hazards
- A detailed action plan the county and communities will implement to reduce risks to natural and human-caused hazards
- Coordination of mitigation efforts with other local, county, regional, state and federal entities
- Access to federal mitigation grant funding

**“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).**



# HMP Update Process

---

- Organize Resources
  - Assess the Risk
  - **Review and Update the HMP**
  - Develop Procedures for Plan Implementation, Monitoring and Update
  - PEMA/FEMA Region 3 Approval
  - Adopt the Plan
- Engage a Wide Range of “Stakeholders”
    - Federal, State, Regional and Local Agencies
    - Business and Civic Groups
    - Academic Institutions
    - Other “Local Governments”
    - The Public



# Update the Hazard Mitigation Goals and Objectives

---

- **Goals:** General guidelines that state what we want to achieve. Should be consistent with the State goals and other local goals.
  - Example: “Protect existing properties.”
- **Objectives:** Define strategies or implementation steps to attain a stated goal.
  - Example: “Enact or enforce regulatory measures that ensure new development will not increase flood threats to existing properties.”
- **Actions:** Specific activities that will achieve our goals and objectives while managing hazard risk.



# Identification and Analysis of Mitigation Actions

---

- Mitigation actions need to be realistic, achievable and action-oriented.
- Can include both regional actions, as well as jurisdiction-specific.
- Can address both public and private property.
- For each proposed mitigation action, the following will be identified:
  - Implementation timeline
  - Estimated cost and benefits (avoided losses)
  - Potential funding sources
  - Lead agency or department
  - Supporting agencies



# Mitigation Actions

---

- **Prevention.** Measures such as planning and zoning, open space preservation, land development regulations, building codes, storm water management
- **Property Protection.** Measures such as acquisition, relocation, storm shutters, rebuilding, barriers, flood-proofing, insurance, and structural retrofits for high winds
- **Public Education and Awareness.** Measures such as outreach projects, real estate disclosure, hazard information centers, technical assistance





# Mitigation Actions (continued)

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- **Natural Resource Protection.** Measures such as erosion and sediment control, stream corridor protection, vegetative management, and wetlands preservation
- **Emergency Services.** Measures such as hazard threat recognition, hazard warning systems, emergency response, protection of critical facilities, and health and safety maintenance
- **Structural Projects.** Measures such as dams, levees, seawalls, bulkheads, retaining walls, channel modifications, storm sewers, and retrofitted buildings and elevated roadways



# Acquisitions and Elevations

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- Acquisition
  - Eliminates exposure
- Elevation
  - Reduces vulnerability



*“At the first sign of a flood, you just push this little button.”*



# Public Education

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- Personal Mitigation

- Hazard insurance and the NFIP
- Elevations and acquisitions
- Preservation of valuables
- Structural retrofits (site grading, wet and dry flood proofing, roof clips, non-combustible roofs)
- Evacuation or in-place sheltering plans
- Defensible space (wildfire)
- Early-warning and alerts
- Communications



# Integration with Other Plans and Programs

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- The Hazard Mitigation Plan should complement and support other plans and regulatory mechanisms
  - Comprehensive Emergency Management Plans (CEMP)
  - Comprehensive / Master Plans (regional and local) –plans that guide and direct land use and development
  - Stormwater Management Plans (flood problem areas and potential solutions identified)
  - Capital Improvement Plans (some of these projects are grant eligible)



# 2014 Draft Mitigation Strategy Section

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- [www.westmorelandhmp.com](http://www.westmorelandhmp.com)



# Plan Implementation

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- Your mitigation strategy section provides a “blueprint” to follow for progressively reducing your community’s hazard risk.
- Mitigation grant opportunities open regularly:
  - The annual HMA grant window opens in June of each year.
  - HMGP funding comes in the wake of Declared Disasters in the State.
- County Hazard Mitigation Coordinators will continue to alert planning partners of grant opportunities as they arise, including all guidance and instructions provided by PEMA and FEMA.





# Mitigation Funding

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- Grant funding typically covers 75% of project costs.
- Projects often provide long-term reductions in municipal services costs.
  - Emergency Response and Protective Services
  - Maintenance and repair of infrastructure
- HM grants can fund post-disaster mitigation of damaged structures and infrastructure (404 and 406 funding).



# How to Stay Involved in the Planning Process

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- Visit the Westmoreland County Hazard Mitigation Plan website ([www.westmorelandhmp.com](http://www.westmorelandhmp.com))
  - Learn more about the planning process
  - Review and provide comments on draft sections of the plan
- Complete Surveys/Handouts
  - Citizen Hazard Preparedness and Mitigation Survey
  - Municipal “Handouts”
- Assist with Mitigation Strategy Development
  - Assist with identifying mitigation projects and initiatives to reduce hazard risk
  - If your property is a candidate for mitigation (e.g. elevation, acquisition), please contact your municipal mitigation planning point-of-contact





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## **Tetra Tech Project Contact:**

**Caitlin Kelly, MSEM, MEP**

**Tetra Tech, Inc.**

**240 Continental Drive, Suite 200**

**Newark, DE 19713**

**Email: [caitlin.kelly@tetrattech.com](mailto:caitlin.kelly@tetrattech.com)**

**Phone: (302) 283-2218**

**Fax: (302) 454-5988**



## Westmoreland County Press Release

### **Westmoreland County Stakeholder and Public Review for the All-Hazards Mitigation Plan**

Westmoreland County's Department of Public Safety invites the public to participate in updating the countywide Hazard Mitigation Plan (HMP). The County will hold its next Hazard Mitigation Planning Workshop on Wednesday, July 16, 2014 from 9:00am – 12:00pm. The workshop will be held at the Westmoreland County Department of Public Safety Conference Room. Residents, local officials, industry representatives, educators, and others are encouraged to attend. Parking is available at the Robert Bell Parking Garage on Otterman Street, or metered lots are available: <http://www.co.westmoreland.pa.us/index.aspx?NID=317>.

Background information about the plan is now on the Westmoreland County Hazard Mitigation Planning website at: [www.westmorelandhmp.com](http://www.westmorelandhmp.com). This site includes an [online hazard awareness survey](#), and the Draft Plan. The public is encouraged to visit the site, take the online survey, review the Draft Plan and provide input on the HMP planning process.

Westmoreland County is in the process of updating its 2009 All-Hazards Mitigation Plan to ensure eligibility for future mitigation funding from the Federal Emergency Management Agency (FEMA). This detailed plan addresses a variety of potential natural and non-natural hazards that could affect some or all of the county's residents.

“The update of this plan will allow the county and its participating municipalities to continue be eligible for future mitigation funding from FEMA,” said Hazard Mitigation Officer, Chris Tantlinger. “We're very eager to get the public's input to help us create a detailed plan that will address a variety of potential hazards that could affect some or all of our citizens.”

For more information, contact Chris Tantlinger at the Westmoreland County Department of Public Safety at 724-600-7349 or [CTANTLIN@co.westmoreland.pa.us](mailto:CTANTLIN@co.westmoreland.pa.us)



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# Westmoreland County seeks to minimize impact of potential disasters

## Details

At a glance

Benefits of effective hazard mitigation planning:

- Reduce the loss of life, property, essential services, critical facilities and economic hardship
- Reduce short-term and long-term recovery and reconstruction costs
- Increase cooperation and communication within the community through the planning process
- Increase potential for state and federal funding for recovery and reconstruction projects

**TRIBLIVE**



By [Paul Peirce](#)

Saturday, July 12, 2014, 12:01 a.m.

Westmoreland County public safety officials are working with municipalities to draft an update to its hazard mitigation plan to reduce long-term risks caused by hazards or natural disasters such as floods, landslides, tornadoes or dam failures.

The county's Department of Public Safety has scheduled a public meeting for 9 a.m. Wednesday in the courthouse in Greensburg as part of updating its 5-year-old, countywide plan.

The plan addresses a variety of potential natural and man-made hazards that could affect county residents and property.

"As the costs of disasters continue to rise, governments and citizens must find ways to reduce hazard risks to communities," according to the county website that details the goals.

Hazard mitigation is important so communities can make stronger and safer repairs and reconstruction after a disaster, officials said.

"We're very eager to get the public's input to help us create a detailed plan that will address a variety of potential hazards that could affect some or all of our citizens," said Chris Tantlinger, the county's hazard mitigation officer.

The new report will contain information on concerns about hazards associated with Marcellus shale well drilling.

"Obviously, the well drilling is something considered today as opposed to five years ago, and the environmental hazards associated with it, such as handling potential chemical spills on highways to disposal sites," Tantlinger said.

Every county is required to have a plan. Westmoreland will coordinate with local municipalities to identify disaster risks, assess capabilities and formulate a strategy to reduce vulnerability.



# Hazard mitigation plan membership lacks in Westmoreland County



By [Rich Cholodofsky](#)

Wednesday, July 16, 2014, 10:45 p.m.

Updated 11 hours ago

Less than half of Westmoreland County's municipalities have signed a hazard mitigation plan that could qualify them for federal disaster funding.

County officials said on Wednesday during a meeting to update the five-year plan that participation needs to increase before the program is approved in October.

"It's not a chicken little-type of thing. It's a way to prevent anything that can happen," said Chris Tantlinger, the county's hazard mitigation coordinator.

Only 32 of the county's 65 municipalities have submitted data detailing how they would be affected by potential disasters such as flooding, fires, blizzards, tornados, landslides, dam failures, earthquakes and other scenarios that could cause injury or loss of life and property.

The plan identifies potential hazards as well as possible solutions, Tantlinger said.

Just 29 municipalities enrolled in the initial plan when it was finalized in 2009. Tantlinger said only municipalities that are part of the hazard mitigation plan are eligible to receive federal funding should the president declare a state of emergency.

Over the past five years, Westmoreland municipalities applied for about \$8 million in disaster relief. The county has received only \$58,000 to purchase two generators to assist during power outages in the aftermath of Hurricane Sandy in 2012.

There is no cost to municipalities to participate, Tantlinger said.

Ligonier Borough, which regularly deals with flooding issues, has enrolled.

Paul Fry, the township's public safety director, said it's vital that the borough ensure it is eligible for federal disaster funding.

Fry was one of the few municipal leaders to attend the meeting. "Why wouldn't you sign in?" Fry said.

City of Greensburg employees also attended.

*Rich Cholodofsky is a staff writer for Trib Total Media.*

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Read more: <http://triblive.com/news/westmoreland/6456509-74/municipalities-plan-county#ixzz37jhXZr4x>  
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“The belief is that local municipalities know particular hazards within a community better than anyone else. We collect the information, present it to the state, which presents it to FEMA for approval,” Tantlinger said.

He said the reports allow municipalities to assess particular hazard vulnerabilities, such as flooding, and what actions and mitigations are planned “so that the particular event may not happen again,” he said.

Tantlinger said the updated reports are aimed at preventing repetitive losses, because reconstruction becomes more expensive as the years go by.

Hazard mitigation breaks the expensive cycle of damage and reconstruction costs by taking a long-term view at rebuilding and recovering from disasters, according to the website.

The plan update will ensure that the county and participating municipalities remain eligible for mitigation funding from the Federal Emergency Management Agency, Tantlinger said.

Information about the plan is on the Westmoreland County Hazard Mitigation Planning website, [www.westmorelandhmp.com](http://www.westmorelandhmp.com). The site includes an online hazard awareness survey and the draft plan.

The public is encouraged to visit the site, take the online survey, review the draft plan and offer more input on the planning process.

More information is available from Tantlinger at the Department of Public Safety at 724-600-7349 or [ctantlin@co.westmoreland.pa.us](mailto:ctantlin@co.westmoreland.pa.us).

*Paul Peirce is a staff writer for Trib Total Media. He can be reached at 724-850-2860 or at [ppeirce@tribweb.com](mailto:ppeirce@tribweb.com).*

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Read more: <http://triblive.com/news/westmoreland/6424448-74/hazard-plan-county#ixzz37SOIYdT>  
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JULY 16, 2014



HAZARD MITIGATION PLAN UPDATE PUBLIC MEETING  
- SENIOR JUDGES COURT ROOM 5TH FLOOR ANNEX  
SIGN IN SHEET

NAME LAST / FIRST	PHONE	EMAIL
TANTLINGER, CHRIS	724 600-7349	ctantlin@co.westmoreland.pa.us
POLOGRUZO, Anthony	724-850-6888	APOLOGRUZO@CO.WESTMORELAND.PA.US
FRY, PAUL	724 238 9852	LIGONIERBOARDPA@COMCAST.NET
Kristin Malie		
Bollinger SKIP	724-433-5352	crboll52@netzero.net
Randy Finfrock	724-454-7585	finfrockr@comcast.net
Chris Bour	724.830.3995	cbour@co.westmoreland.pa.us
Dan Stevens	724-600-7705	dstevens@co.westmoreland.pa.us
MARY PEARZ		

## **APPENDIX F: SAMPLE RESOLUTION OF PLAN ADOPTION**

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This appendix includes an example resolution as provided in the Pennsylvania's All-Hazard Mitigation Planning – Standard Operating Guide (Appendix 15), to be submitted by each participating jurisdiction authorizing adoption of the Westmoreland County Hazard Mitigation Plan Update.



<County Name> <Year> Hazard Mitigation Plan  
Municipal Adoption Resolution

Resolution No. \_\_\_\_\_  
<Borough/Township of Municipality Name>, <County Name>, Pennsylvania

**WHEREAS**, the <Borough/Township of Municipality Name>, <County Name>, Pennsylvania is most vulnerable to natural and human-made hazards which may result in loss of life and property, economic hardship, and threats to public health and safety, and

**WHEREAS**, Section 322 of the Disaster Mitigation Act of 2000 (DMA 2000) requires state and local governments to develop and submit for approval to the President a mitigation plan that outlines processes for identifying their respective natural hazards, risks, and vulnerabilities, and

**WHEREAS**, the <Borough/Township of Municipality Name> acknowledges the requirements of Section 322 of DMA 2000 to have an approved Hazard Mitigation Plan as a prerequisite to receiving post-disaster Hazard Mitigation Grant Program funds, and

**WHEREAS**, the <County Name> <Year> Hazard Mitigation Plan has been developed by the <Name of County Department> and the <Name of County Department> in cooperation with other county departments, and officials and citizens of <Borough/Township of Municipality Name>, and

**WHEREAS**, a public involvement process consistent with the requirements of DMA 2000 was conducted to develop the <County Name> <Year> Hazard Mitigation Plan, and

**WHEREAS**, the <County Name> <Year> Hazard Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by both natural and human-made hazards that face the County and its municipal governments,

**NOW THEREFORE BE IT RESOLVED** by the governing body for the <Borough/Township of Municipality Name>:

- The <County Name> <Year> Hazard Mitigation Plan is hereby adopted as the official Hazard Mitigation Plan of the <Borough/Township>, and
- The respective officials and agencies identified in the implementation strategy of the <County Name> <Year> Hazard Mitigation Plan are hereby directed to implement the recommended activities assigned to them.

**ADOPTED**, this \_\_\_\_\_ day of \_\_\_\_\_, <Year>

**ATTEST:**

\_\_\_\_\_

**<MUNICIPALITY>**

By \_\_\_\_\_

By \_\_\_\_\_

By \_\_\_\_\_

This appendix provides a summary of available federal programs that relate to mitigation planning and may provide possible sources of funding or technical support for mitigation initiatives.



APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
<b>Basic and Applied Research/Development</b>		
Center for Integration of Natural Disaster Information	<b>Technical Assistance:</b> Develops and evaluates technology for information integration and dissemination	Department of Interior ( <b>DOI</b> ) –US Geological Survey ( <b>USGS</b> ), The Center for Integration of Natural Hazards Research: (703) 648-6059 <a href="mailto:hazinfo@usgs.gov">hazinfo@usgs.gov</a>
Hazard Reduction Program	<b>Funding</b> for research and related educational activities on hazards.	National Science Foundation ( <b>NSF</b> ), Directorate for Engineering, Division of Civil and Mechanical Systems, Hazard Reduction Program: (703) 306-1360
Decision, Risk, and Management Science Program	<b>Funding</b> for research and related educational activities on risk, perception, communication, and management (primarily technological hazards)	<b>NSF</b> – Directorate for Social, Behavioral and Economic Science, Division of Social Behavioral and Economic Research, Decision, Risk, and Management Science Program (DRMS): (703) 306-1757 <a href="http://www.nsf.gov/sbe/drms/start.htm">www.nsf.gov/sbe/drms/start.htm</a>
Societal Dimensions of Engineering, Science, and Technology Program	<b>Funding</b> for research and related educational activities on topics such as ethics, values, and the assessment, communication, management and perception of risk	<b>NSF</b> – Directorate for Social, Behavioral and Economic Science, Division of Social, Behavioral and Economic Research, Societal Dimensions of Engineering, Science and Technology Program: (703) 306-1743
National Earthquake Hazard Reduction Program (NEHRP) in Earth Sciences	<b>Research</b> into basic and applied earth and building sciences.	<b>NSF</b> – Directorate for Geosciences, Division of Earth Sciences: (703) 306-1550
<b>Technical and Planning Assistance</b>		
Planning Assistance to States	<b>Technical and planning assistance</b> for the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources.	Department of Defense ( <b>DOD</b> ) US Army Corps of Engineers ( <b>USACE</b> ) Contact the Floodplain Management Staff in the Appropriate USACE Regional Office North Atlantic: (212) 264-7813 South Atlantic: (404) 331-4441 Great Lakes and Ohio River: (513) 684-6050 Mississippi Valley: (601) 634-5827 Northwestern: (503) 808-3853 Southwestern: (214-767-2613 South Pacific: (415) 977-8164 Pacific Ocean: (808) 438-8863
Disaster Mitigation Planning and Technical Assistance	<b>Technical and planning assistance</b> grants for capacity building and mitigation project activities focusing on creating disaster resistant jobs and workplaces.	Department of Commerce ( <b>DOC</b> ), Economic Development Administration ( <b>EDA</b> ): (800) 345-1222 <b>EDA's</b> Disaster Recovery Coordinator: (202) 482-6225 <a href="http://www.doc.gov/eda">www.doc.gov/eda</a>

APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
Watershed Surveys and Planning	<b>Surveys and planning studies</b> for appraising water and related resources, and formulating alternative plans for conservation use and development. Grants and advisory/counseling services to assist w/ planning and implementation improvement.	US Department of Agriculture ( <b>USDA</b> ) – National Resources Conservation Service ( <b>NRCS</b> ) Watersheds and Wetlands Division: (202) 720-4527 Deputy Chief for Programs: (202) 690-0848 <a href="http://www.nrcs.usda.gov">www.nrcs.usda.gov</a>
National Flood Insurance Program	<b>Formula grants to States</b> to assist communities to comply with NFIP floodplain management requirements (Community Assistance Program).	<b>FEMA</b>
Emergency Management / Mitigation Training	<b>Training</b> in disaster mitigation, preparedness, planning.	<b>FEMA</b>
National Dam Safety Program	<b>Technical assistance</b> , training, and grants to help improve State dam safety programs.	<b>FEMA</b>
National Earthquake Hazards Reduction Program	<b>Training, planning and technical assistance</b> under grants to States or local jurisdictions.	<b>FEMA; DOI-USGS USGS</b> Earthquake Program Coordinator: (703) 648-6785
Volcano Hazards Program	<b>Technical assistance:</b> Volcano hazard warnings and operation of four volcano observatories to monitor and assess volcano hazard risk.	<b>DOI-USGS</b> Volcanic Hazards Program Coordinator: (703) 648-6708 (650) 329-5228
Floodplain Management Services	<b>Technical and planning assistance</b> at the local, regional, or national level needed to support effective floodplain management.	<b>DOD-USACE</b> North Atlantic: (212) 264-7813 South Atlantic: (404) 331-4441 Great Lakes and Ohio River: (513) 684-6050 Mississippi Valley: (601) 634-5827 Northwestern: (503) 808-3853 Southwestern: (214-767-2613 South Pacific: (415) 977-8164 Pacific Ocean: (808) 438-8863
Watershed Protection and Flood Prevention Program	<b>Technical and financial assistance</b> for installing works of improvement to protect, develop, and utilize land or water resources in small watersheds under 250,000 acres.	<b>USDA-NRCS</b> Director, Watersheds and Wetlands Division: (202) 720-3042 (202) 690-4614 <a href="http://www.nrcs.usda.gov">www.nrcs.usda.gov</a>
Environmental Quality Incentives Program (EQIP)	<b>Technical</b> , educational, and limited <b>financial assistance</b> to encourage environmental enhancement.	<b>USDA-NRCS</b> NRCS County Offices Or NRCS EQUIP Program Manager: (202) 720-1834 <a href="http://www.nrcs.usda.gov">www.nrcs.usda.gov</a>

APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
National Earthquake Hazard Reduction Program	<b>Technical and planning assistance</b> for activities associated with earthquake hazards mitigation.	FEMA, DOI-USGS Earthquake Program Coordinator: (703) 648-6785
<b>HAZARD Identification and Mapping</b>		
National Flood Insurance Program: Flood Mapping	<b>Flood insurance rate maps</b> and flood plain management maps for all NFIP communities;	FEMA
National Flood Insurance Program: Technical Mapping Advisory Council	<b>Technical guidance and advice</b> to coordinate FEMA's map modernization efforts for the National Flood Insurance Program.	<b>DOI-USGS</b> <b>USGS</b> – National Mapping Division: (573) 308-3802
National Digital Orthophoto Program	Develops <b>topographic quadrangles</b> for use in mapping of flood and other hazards.	<b>DOI-USGS</b> <b>USGS</b> – National Mapping Division: (573) 308-3802
Stream gauging and Flood Monitoring Network	Operation of a <b>network of over 7,000 stream gauging stations</b> that provide data on the flood characteristics of rivers.	<b>DOE-USGS</b> Chief, Office of Surface Water, <b>USGS:</b> (703) 648-5303
Mapping Standards Support	<b>Expertise in mapping and digital data</b> standards to support the National Flood Insurance Program.	<b>DOI-USGS</b> USGS – National Mapping Division: (573) 308-3802
Soil Survey	<b>Maintains soil surveys</b> of counties or other areas to assist with farming, conservation, mitigation or related purposes.	<b>USDA-NRCS</b> NRCS – Deputy Chief for Soil Science and Resource Assessment: (202) 720-4630
National Earthquake Hazards Reduction Program	<b>Seismic mapping for U.S.</b>	<b>DOI-USGS</b> USGS Earthquake Program Coordinator: (703) 648-6785
<b>Project Support</b>		
Aquatic Ecosystem Restoration	<b>Direct support</b> for carrying out aquatic ecosystem restoration projects that will improve the quality of the environment.	<b>DOD-USACE</b> Chief of Planning @ appropriate USACE Regional Office North Atlantic: (212) 264-7111 South Atlantic: (404) 331-4580 Great Lakes and Ohio River Chicago: (312) 886-5468 Cincinnati: (513) 684-3008 Mississippi Valley Division: (601) 634-7880 Northwestern Division Portland: (503) 808-3850 Omaha: (402) 697-2470 Southwestern Division: (214) 767-2314 South Pacific Division: (415) 977-8171 Pacific Ocean Division: (808) 438-3850

APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
Beneficial Uses of Dredged Materials	<b>Direct assistance</b> for projects that protect, restore, and create aquatic and ecologically related habitats, including wetlands, in connection with dredging an authorized Federal navigation project.	<b>DOD-USACE</b> Same as above
Wetlands Protection – Development Grants	<b>Grants</b> to support the development and enhancement of State and tribal wetlands protection programs.	US Environmental Protection Agency ( <b>EPA</b> ) EPA Wetlands Hotline: (800) 832-7828 Or EPA Headquarters, Office of Water Chief, Wetlands Strategies and State Programs: (202) 260-6045
Clean Water Act Section 319 Grants	<b>Grants to States</b> to implement non-point source programs, including support for non-structural watershed resource restoration activities.	<b>EPA</b> Office of Water Chief, Non-Point Source Control Branch: (202) 260-7088, 7100
Coastal Zone Management Program	<b>Grants</b> for planning and implementation of non-structural coastal flood and hurricane hazard mitigation projects and coastal wetlands restoration.	Department of Commerce <b>DOC</b> National Oceanic and Atmospheric Administration ( <b>NOAA</b> ) National Ocean Service Office of Ocean and Coastal Resource Management Chief, Coastal Programs Division: (301) 713-3102
Community Development Block Grant (CDBG) State Administered Program	<b>Grants to States</b> to develop viable communities (e.g., housing, a suitable living environment, expanded economic opportunities) in non-entitled areas, for low- and moderate-income persons.	US Department of Housing and Urban Development ( <b>HUD</b> ) State CDBG Program Manager Or State and Small Cities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-3587
Community Development Block Grant Entitlement Communities Program	<b>Grants</b> to entitled cities and urban counties to develop viable communities (e.g., decent housing, a suitable living environment, expanded economic opportunities), principally for low- and moderate-income persons.	<b>HUD</b> City and county applicants should call the Community Planning and Development staff of their appropriate HUD field office. As an alternative, they may call the Entitlement Communities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-1577, 3587
Emergency Watershed Protection Program	Provides <b>technical and financial assistance</b> for relief from imminent hazards in small watersheds, and to reduce vulnerability of life and property in small watershed areas damaged by severe natural hazard events.	<b>USDA – NRCS</b> National Office – (202) 690-0848 Watersheds and Wetlands Division: (202) 720-3042

APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
Rural Development Assistance -- Utilities	Direct and guaranteed rural economic <b>loans and business enterprise grants</b> to address utility issues and development needs.	<b>USDA-Rural Utilities Service (RUS)</b> Program Support: (202) 720-1382 Northern Regional Division: (202) 720-1402 Electric Staff Division: (202) 720-1900 Power Supply Division: (202) 720-6436
Rural Development Assistance – Housing	<b>Grants, loans, and technical assistance</b> in addressing rehabilitation, health and safety needs in primarily low-income rural areas. Declaration of major disaster necessary.	<b>USDA-Rural Housing Service (RHS)</b> Community Programs: (202) 720-1502 Single Family Housing: (202) 720-3773 Multi Family Housing: (202) 720-5177
Project Impact: Building Disaster Resistant Communities	<b>Funding and technical assistance</b> to communities and States to implement a sustained pre-disaster mitigation program.	<b>FEMA</b>
Flood Mitigation Assistance	<b>Grants to States</b> and communities for pre-disaster mitigation to help reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program.	<b>FEMA</b>
Hazard Mitigation Grant Program	<b>Grants to States and communities</b> for implementing long-term hazard mitigation measures following a major disaster declaration.	<b>FEMA</b>
Public Assistance Program (Infrastructure)	<b>Grants to States and communities</b> to repair damaged infrastructure and public facilities, and help restore government or government-related services. Mitigation funding is available for work related to damaged components of the eligible building or structure.	<b>FEMA</b>
National Flood Insurance Program	Makes available <b>flood insurance</b> to residents of communities that adopt and enforce minimum floodplain management requirements.	<b>FEMA</b>
HOME Investments Partnerships Program	<b>Grants to States, local government</b> and consortia for permanent and transitional housing (including support for property acquisition and rehabilitation) for low-income persons.	<b>HUD</b> Community Planning and Development, Grant Programs, Office of Affordable Housing, HOME Investment Partnership Programs: (202) 708-2685 (202) 708 0614 extension 4594 1-800-998-9999
Disaster Recovery Initiative	<b>Grants</b> to fund gaps in available recovery assistance after disasters (including mitigation).	<b>HUD</b> Community Planning and Development Divisions in their respective HUD field offices or HUD Community Planning and Development: (202) 708-2605

APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
Non-Structural Alternatives to Structural Rehabilitation of Damaged Flood Control Works	<b>Direct planning and construction grants</b> for non-structural alternatives to the structural rehabilitation of flood control works damaged in floods or coastal storms. \$9 million FY99	<b>DOD-USACE</b> Emergency Management contact in respective <b>USACE</b> field office: North Atlantic: (718) 491-8735 South Atlantic: (404) 331-6795 Great Lakes and Ohio River: (513) 684-3086 Mississippi Valley: (601) 634-7304 Northwestern: (503) 808-3903 Southwestern: (214) 767-2425 South Pacific: (415) 977-8054 Pacific Ocean: (808) 438-1673
Partners for Fish and Wildlife	<b>Financial and technical assistance</b> to private landowners interested in pursuing restoration projects affecting wetlands and riparian habitats.	Department of Interior ( <b>DOI</b> ) – Fish and Wildlife Service ( <b>FWS</b> ) National Coordinator, Ecological Services: (703) 358-2201 A list of State and Regional contacts is available from the National Coordinator upon request.
Project Modifications for Improvement of the Environment	Provides for <b>ecosystem restoration</b> by modifying structures and/or operations or water resources projects constructed by the USACE, or restoring areas where a USACE project contributed to the degradation of an area.	<b>DOD-USACE</b> Chief of Planning @ appropriate USACE Regional Office North Atlantic: (212) 264-7111 South Atlantic: (404) 331-6270 Great Lakes and Ohio River Chicago: (312) 886-5468 Cincinnati: (513) 684-3008 Mississippi Valley Division: (601) 634-5762 Northwestern Division Portland: (503) 808-3850 Omaha: (402) 697-2470 Southwestern Division: (214) 767-2310 South Pacific Division: (415) 977-8171 Pacific Ocean Division: (808) 438-8880
Post-Disaster Economic Recovery Grants and Assistance	<b>Grant funding</b> to assist with the long-term economic recovery of communities, industries, and firms adversely impacted by disasters.	Department of Commerce ( <b>DOC</b> ) – Economic Development Administration ( <b>EDA</b> ) EDA Headquarters Disaster Recovery Coordinator: (202) 482-6225
Public Housing Modernization Reserve for Disasters and Emergencies	<b>Funding</b> to public housing agencies for modernization needs resulting from natural disasters (including elevation, flood proofing, and retrofit).	<b>HUD</b> Director, Office of Capital Improvements: (202) 708-1640
Indian Housing Assistance (Housing Improvement Program)	<b>Project grants and technical assistance</b> to substantially eliminate sub-standard Indian housing.	Department of Interior ( <b>DOI</b> )-Bureau of Indian Affairs ( <b>BIA</b> ) Division of Housing Assistance, Office of Tribal Services: (202) 208-5427
Land Protection	<b>Technical assistance</b> for run-off retardation and soil erosion prevention to reduce hazards to life and property.	<b>USDA-NRCS</b> Applicants should contact the National NRCS office: (202) 720-4527



APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
North American Wetland Conservation Fund	<b>Cost-share grants</b> to stimulate public/private partnerships for the protection, restoration and management of wetland habitats.	<b>DOI-FWS</b> North American Waterfowl and Wetlands Office: (703) 358-1784
Land Acquisition	<b>Acquires or purchases easements</b> on high-quality lands and waters for inclusion into the National Wildlife Refuge System.	<b>DOI-FWS</b> Division of Realty, National Coordinator: (703) 358-1713
Federal Land Transfer / Federal Land to Parks Program	<b>Identifies, assesses, and transfers available Federal real</b> property for acquisition for State and local parks and recreation, such as open space.	<b>DOI-NPS</b> General Services Administration Offices Fort Worth, TX: (817) 334-2331 Boston, MA: (617) 835-5700 Or Federal Lands to Parks Leader <b>NPS</b> National Office: (202) 565-1184
Wetlands Reserve Program	<b>Financial and technical assistance</b> to protect and restore wetlands through easements and restoration agreements.	<b>USDA-NRCS</b> National Policy Coordinator NRCS Watersheds and Wetlands Division: (202) 720-3042
Transfers of Inventory Farm Properties to Federal and State Agencies for Conservation Purposes	Transfers title of certain inventory farm properties owned by FSA to Federal and State agencies for <b>conservation</b> purposes (including the restoration of wetlands and floodplain areas to reduce future flood potential)	US Department of Agriculture ( <b>USDA</b> ) – Farm Service Agency ( <b>FSA</b> ) Farm Loan Programs National Office: (202) 720-3467, 1632
<b>Financing and Loan Guarantees</b>		
Physical Disaster Loans and Economic Injury Disaster Loans	<b>Disaster loans</b> to non-farm, private sector owners of disaster damaged property for uninsured losses. Loans can be increased by up to 20 percent for mitigation purposes.	Small Business Administration ( <b>SBA</b> ) National Headquarters Associate Administrator for Disaster Assistance: (202) 205-6734
Conservation Contracts	<b>Debt reduction</b> for delinquent and non-delinquent borrowers in exchange for conservation contracts placed on environmentally sensitive real property that secures FSA loans.	<b>USDA-FSA</b> Farm Loan Programs FSA National Office: (202) 720-3467, 1632 or local FSA office
Clean Water State Revolving Funds	<b>Loans</b> at actual or below-market interest rates to help build, repair, relocate, or replace wastewater treatment plants.	<b>EPA</b> EPA Office of Water State Revolving Fund Branch Branch Chief: (202) 260-7359 A list of Regional Offices is available upon request

APPENDIX G: FEDERAL MITIGATION PROGRAMS, ACTIVITIES AND INITIATIVES

Program/Activity	Type of Assistance	Agency and Contact
Section 108 Loan Guarantee Program	<b>Loan guarantees</b> to public entities for community and economic development (including mitigation measures).	<b>HUD</b> Community Planning and Development staff at appropriate HUD field office, or the Section 108 Office in HUD Headquarters: (202) 708-1871
Section 504 Loans for Housing	<b>Repair loans, grants and technical assistance</b> to very low-income senior homeowners living in rural areas to repair their homes and remove health and safety hazards.	US Department of Agriculture ( <b>USDA</b> ) – Rural Housing Service ( <b>RHS</b> ) Contact local RHS Field Office, or RHS Headquarters, Director, Single Family Housing Direct Loan Division: (202) 720-1474
Section 502 Loan and Guaranteed Loan Program	Provides <b>loans, loan guarantees, and technical assistance</b> to very low and low-income applicants to purchase, build, or rehabilitate a home in a rural area.	<b>USDA-RHS</b> Contact the Local RHS Field Office, or the Director, Single Family Housing Guaranteed Loan Division, RHS: (202) 720-1452
Rural Development Assistance -- Utilities	Direct and guaranteed <b>rural economic loans and business enterprise grants</b> to address utility issues and development needs.	<b>USDA-Rural Utility Service (RUS)</b> Contact Rural Development Field Offices, or RHS, Deputy Administrator, Community Programs Division: (202) 720-1490
Farm Ownership Loans	<b>Direct loans, guaranteed / insured loans, and technical assistance</b> to farmers so that they may develop, construct, improve, or repair farm homes, farms, and service buildings, and to make other necessary improvements.	<b>USDA-FSA</b> Director, Farm Programs Loan Making Division, FSA: (202) 720-1632