**Upper Mount Bethel Township, Northampton County Annex**

**Hazard Mitigation Plan Points-of-Contact**

|  |  |
| --- | --- |
| **Primary:** | **Alternate:** |
| Lindsey Manzi  Emergency Management Coordinator  493 Slateford Road, Mount Bethel, PA 18343  570-897-6127, Extension: 6  roadcrewchief@umbt.org | Bill Williams  Deputy Emergency Management Coordinator  339 Kearney Lane, Mount Bethel, PA 18343  570-897-6127, Extension: 6  billwill@epix.net |

**Municipal Profile**

Upper Mount Bethel Township is located in the far northeast corner of Northampton County, sharing borders with Monroe County, Pa, and with New Jersey. The township encompasses an area of 44.3 square miles and has a population of 6,439 (2020 Census). Neighboring municipalities include Washington Township and East Bangor to the southwest; Lower Mount Bethel Township to the south; Belvidere, NJ to the southeast; Portland Borough and townships in the state of New Jersey to the east; and Delaware Water Gap, Stroud Township, and Hamilton Township (all in Monroe County, PA) to the north.

Upper Mount Bethel Township is within the Delaware River Watershed, and is drained by the Delaware River, which forms its eastern boundary separating it from New Jersey. Jacoby Creek in the north of the township, and Allegheny Creek in the south-central part of the township are tributaries to the Delaware River. Other creeks and minor waterways flow from the western part of the township in Martins Creek, also a tributary of the Delaware River further south. There are also a few bodies of standing water in the northern part of the township, including Minsi Lake and Echo Lake.

Three state highways intersect the township; SR 191 runs north-south in the northwestern part of the township, connecting the Lehigh Valley to the Poconos in eastern Pennsylvania. SR 512 travels east-west paralleling railroad tracks through the center of the township as Mount Bethel Highway and terminates at a “T’ intersection with SR 611. SR 611 also cross the township from the lower west to the mid-west, where it veers north paralleling the Delaware River as Delaware Drive.

**Municipal Participation**

1. Identify municipal stakeholders to be involved in the planning process such as, floodplain administrator, public works, emergency management, engineers, planners, etc., and include their specific role in the process.

|  |  |
| --- | --- |
| Lindsey Manzi, Emergency Management Coordinator  Role: Primary Contact | Bill Williams, Deputy Emergency Management Coordinator  Role: Secondary Contact |

*\*please update table as needed*

1. Identify community stakeholders such as; neighborhood groups, religious groups, major employers / businesses, etc., that will be informed and / or involved in the planning process and describe how they will be involved.

None

1. Describe how the public **will be engaged** in the current planning process (examples, newsletters, social media, etc.), **and how they were engaged** since the 2018 Hazard Mitigation Plan.

None

**Compliance with the National Flood Insurance Program (NFIP)**

| **Topic** | **Identify source of information, if different from the one listed.** | **Additional Comments** |
| --- | --- | --- |
| **1. Staff Resources** | | |
| Is the Community Floodplain Administrator (FPA) or NFIP Coordinator certified? | Community FPA | Yes |
| Is floodplain management an auxiliary function? | Community FPA | Yes |
| Provide an explanation of NFIP administration services (e.g., permit review, GGIS, education or outreach, inspections, engineering capability) | Community FPA | Administration by Justin Coyle, PE, of Carrol Engineering Company Inc., who conducts permit review, subdivision review and inspections and provides GIS mapping. Township staff provide education and outreach. |
| What are the barriers to running an effective NFIP program in the community, if any? | Community FPA | Rural families living in the floodplain on low or fixed incomes may behave outside the regulations with accessory structure installations and small additions to existing structures. |
| **2. Compliance History** | | |
| Is the community in good standing with the NFIP? | State NFIP Coordinator, FEMA NFIP Specialist, or community records | Yes |
| Are there any outstanding compliance issues (i.e., current violations)? |  | No |
| When was the most recent Community Assistance Visits (CAV) or Community Assistance Contact (CAC)? |  | Unknown |
| Is a CAV or CAC scheduled or needed? |  | Yes |
| **3. Regulation** | | |
| When did the community enter the NFIP? | NFIP Community Status Book | N/A |
| Are the Flood Insurance Rate Maps (FIRMs) digital or paper?  How are residents assisted with mapping? | Community FPA | Both digital and paper. The zoning officer helps residents with the mapping, explaining how the mapping works and then looks up the mapping either digitally or on paper. The Township Manager is also familiar with the mapping and can assist residents. The mapping can also be placed on the website. |
| Do floodplain regulations meet or exceed FEMA or State minimum requirements?  If so, in what ways? | Community FPA | The floodplain regulations exceed the minimum for first floor elevation of a structure, requiring 1.5' freeboard above the 100-year elevation. |
| Describe the permitting process | Community FPA, State, FEMA NFIP | All applicants must apply to the Zoning Hearing Board for permits. |
| **4. Insurance Summary** | | |
| How many NFIP policies are in the community?  What is the total premium and coverage? | State NFIP Coordinator or  FEMA NFIP Specialist | N/A |
| How many claims have been paid in the community? What is the total amount of paid claims? How many substantial damage claims have there been? | FEMA NFIP or  Insurance Specialist | N/A |
| How many structures are exposed to flood risk within the community? | Community FPA or GIS Analyst | N/A |
| Describe any areas of flood risk with limited NFIP policy coverage | Community FPA or  FEMA Insurance Specialist | N/A |
| **5. Community Rating System (CRS)** | | |
| Does the community participate in CRS? | Community FPA, State, or FEMA NFIP | No |
| If so, what is the community’s CRS Class Ranking? | Flood Insurance Manual (http://www.fema.gov/floodinsurancemanual.gov) | Unknown |
| What categories and activities provide CRS points and how can the Class be improved? |  | Educational outreach and permit tracking |
| Does the plan include CRS planning requirements? | Community FPA, FEMA CRS Coordinator, or ISO representative | No plan |

**Community Assets**

Community assets are defined to include anything that is important to the character as well as the function of a community, and can be described in four categories, they are; people, economy, natural environment and built environment. Please identify the community assets and location under each category.

1. **People**

* Concentrations of vulnerable populations such as the elderly, physically or mentally disabled, non-English speaking, and the medically or chemically dependent.

There are elderly and physically or mentally disabled persons living in private homes in river communities, such as Slateford, Sandy Shore, and along the River Road corridor. There are no group homes or medical facilities located within our borders.

* Types of visiting populations where large numbers of people are concentrated such as visitors for special events and students.

Several hundred people visit the Tuscarora Inn and Conference Center. Several hundred people stay at the Driftstone Campground south of the Tuscarora Inn. On any given weekend, there could be as many as a thousand visitors at these two locations. Along the Blue Mountain, there are groups that meet at Kirkridge Retreat. There are hikers along the Appalachian Trail, thousand that pass through each year.

1. **Economy**

* Major employers, primary economic sectors such as agriculture and commercial centers where losses would have a severe impact on the community.

Bangor Area School District

Air Liquide

LamTech

Custom Laminating

Slicing Tech

Smith-Wilbert

There are also seasonal businesses – Tuscarora Inn and Conference Center and five campgrounds, with one campground, Driftstone, entirely located in the General Floodplain.

There are over 20 farms, mostly located in the Southern area.

1. **Natural Environment**

* Those areas / features that can provide protective functions that reduce the magnitude of hazard events such as, wetlands or riparian areas, and other environmental features important to protect.

Upper Mount Bethel Township has more wetlands than any other township in Northampton County, including Mt. Bethel Fens in the Jacoby Creek Watershed; the recently township-owned and preserved Eastern Properties, with 13 ponds and several acres of wetlands; and large wetland areas on the Martin’s Creek Watershed near Minsi Lake.

1. **Built Environment**

* Existing structures such as, concentrations of buildings that may be more vulnerable to hazards based on location, age, construction type and / or condition of use.

Several old private homes in Slateford (General Floodplain), Sandy Shore (General Floodplain), and along River Road

* Infrastructure systems such as water and wastewater facilities, power utilities, transportation systems, communication systems, energy pipelines and storage.

There are commercial gas lines that cross the Township, commercial water systems that are privately owned, and a portion of the wastewater piping for Portland Borough located within our borders. NRG Power Plant (formerly Portland Generating Station).

* High potential loss facilities such as, dams, locations that house hazardous materials, military and / or civilian defense installations.

Minsi Lake Dam

* Critical facilities such as, hospitals, medical facilities, police and fires stations, emergency operations centers, shelters, schools and airports / heliports.

Mount Bethel Volunteer Fire Company, Mount Bethel (also a shelter)

North Bangor Fire Hall, Bangor, PA 18013

Upper Mount Bethel Township Municipal Building, Mount Bethel

Bangor Area School District, Mount Bethel

* Cultural / historical resources such as, museums, parks, stadiums, etc.

Slate Belt Museum, Mount Bethel

Mount Bethel Community Park, Mount Bethel

Eastern Properties Preserve, Mount Bethel

**Capability Assessment**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Capability** | * **Regulatory** * **Tools** * **Programs** | **Status** | | | **Department /**  **Agency**  **Responsible** | **Effect on Hazard Loss Reduction:**  **-Supports**  **-Neutral**  **-Hinders** | **Change since 2018 Plan?**  **+ Positive**  **- Negative** | **Has the 2018 Plan been integrated into the Regulatory Tool/Program? If so, how?** | **How can these capabilities be expanded and improved to reduce risk?** | **Additional Comments** |
| **In Place** | **Date Adopted or Updated** | **Under Development** |
| **1. Planning & Regulatory** | Comprehensive Plan | X | 7/9/01 |  |  | + | N/A |  |  |  |
| Capital Improvement Plan |  |  | X |  |  |  |  |  |  |
| Economic Development Plan |  |  | X |  |  |  |  |  |  |
| Continuity of Operations Plan | X | 11/8/10 |  | UMBT | + |  |  |  |  |
| Stormwater Management Plan / Ordinance | X | 4/9/07 |  |  | + | N/A |  |  |  |
| Open Space Management Plan (or Parks/Rec., Greenways Plan) | X | 3/04; 3/09 |  |  | + | N/A |  |  |  |
| Natural Resource Protection Plan | X | 3/2009 |  |  | + | N/A |  |  |  |
| Transportation Plan |  |  |  |  |  |  |  |  |  |
| Historic Preservation Plan |  |  | X |  |  |  |  |  |  |
| Floodplain Management Plan |  | 4/2014 | X |  |  |  |  |  |  |
| Farmland Preservation | X | 3/2009 |  | UMBT | + | N/A |  |  |  |
| Evacuation Plan | X | 11/8/10 |  | UMBT | + |  |  |  |  |
| Disaster Recovery Plan | X | 11/8/10 |  | UMBT | + |  |  |  |  |
| Hazard Mitigation Plan | X | 2018 | X |  |  |  |  |  |  |
| Emergency Operations Plan | X | 12/2022 |  | UMBT | + |  |  |  |  |
| Zoning Regulations | X | 3/15/04 |  | UMBT | + | N/A |  |  |  |
| Floodplain Regulations | X | 4/2014 |  | UMBT | + |  |  |  |  |
| NFIP Participation | X |  |  | UMBT | + |  |  |  |  |
| Building Code | X | 6/14/04 |  |  | + | N/A |  |  |  |
| Fire Code | X | 6/14/04 |  |  | + | N/A |  |  |  |
| Other |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Capability** | * **Staff** * **Personnel** * **Resources** | **Yes** | **No** | **Department / Agency** | **Change since 2018 Plan?**  **+ Positive**  **- Negative** | **How can these capabilities be expanded and improved to reduce risk?** | **Additional Comments** |
| **2. Administrative & Technology** | Planners (with land use / land development knowledge) | X |  | Township  Engineer, UMBT  Planning  Commission |  |  |  |
| Planners or engineers (with natural and / or human-caused hazards knowledge) | X |  | Township Engineer |  |  |  |
| Engineers or professionals trained in building and / or infrastructure construction practices (including building inspectors) | X |  | Building Codes |  |  |  |
| Emergency Manager | X |  | Emergency Management |  |  |  |
| Floodplain administrator / manager | X |  | Floodplain Administrator |  |  |  |
| Land surveyors | X |  | Township Engineer |  |  |  |
| Staff familiar with the hazards of the community | X |  | Zoning, Road |  |  |  |
| Personnel skilled in Geographical Information Systems (GIS) and / or FEMA’s HAZUS program | X |  | Township Engineer |  |  |  |
| Grant writers or fiscal staff to handle large / complex grants | X |  | Management, Bookkeeping |  |  |  |
| Other |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Capability** | * **Staff** * **Personnel** * **Resources** | **Yes** | **No** | **Department / Agency** | **Change since 2018 Plan?**  **+ Positive**  **- Negative** | **How can these capabilities be expanded and improved to reduce risk?** | **Additional Comments** |
| **3. Financial Resources** | Capital improvement programming | X |  | Management |  |  |  |
| Community Development Block Grants (CDBG) |  |  |  |  |  |  |
| Special purposes taxes |  |  |  |  |  |  |
| Gas / Electricity utility fees |  |  |  |  |  |  |
| Water / Sewer fees |  |  |  |  |  |  |
| Stormwater utility fees |  |  |  |  |  |  |
| Development impact fees |  |  |  |  |  |  |
| General obligation, revenue, and / or special tax bonds | X |  | Management |  |  |  |
| Partnering arrangements or intergovernmental agreements | X |  | Management,  Road |  |  |  |
| Other |  |  |  |  |  |  |
| **4. Education & Outreach** | Firewise Communities Certification |  |  |  |  |  |  |
| StormReady Certification |  |  |  |  |  |  |
| Natural disaster or safety-related school programs |  |  |  |  |  |  |
| Ongoing public education or information programs such as, responsible water use, fire safety, household preparedness, and environmental education. |  |  |  |  |  |  |
| Public-private partnership initiatives addressing disaster related issues. | X |  | Township and Air  Liquide |  | It could be improved to include other companies within the township. | There were incidents at Air Liquide (formerly Voltaix) that resulted in monthly safety/hazard mitigation meetings with the public |
| Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | X |  |  |  |  |  |
| Other |  |  |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Capability** |  | **Degree of Capability** | | | **Change since the 2018 Hazard Mitigation Plan?**  **If so, how?** | **Additional Comments** |
| **Limited** | **Moderate** | **High** |
| **5. Self – Assessment** | Planning and Regulatory |  |  | X | No |  |
| Administrative and Technical |  |  | X | New township engineer with experience in hazard mitigation |  |
| Financial |  |  | X | Financially solvent,  low debt / assets ratio |  |
| Education and Outreach | X |  |  | Small, overworked staff |  |

**Known or Anticipated Future Development / Redevelopment**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Development /**  **Property Name** | **Type of Development** | **Number of Structures** | **Location** | **Known Hazard Zone** | **Description / Status** |
| River Pointe Logistics Center | Industrial Park | 15 | River Road | None | 7 Million SF – Planned Industrial Park |

**Natural & Non-Natural Event History Specific to Upper Mount Bethel Township**

|  |  |  |
| --- | --- | --- |
| **Type of Event and Date(s)** | **FEMA Disaster #**  **(if applicable)** | **Local Damage(s) or Loss(es)** |
| Severe winter storm / snowstorm, January 22 - 23, 2016 | DR-4267-PA | $42,000 in losses due to major snow storm |
| Pennsylvania COVID-19 Pandemic – 1/2020 | DR-4506-PA | Emergency Protective measures to combat COVID-19 Pandemic. |
| Remnants of Hurricane Ida | DR-4618-PA | Assistance to eligible individuals and families affected by this disaster. |

**2018 Municipal Action Plan Status**

| **Existing Mitigation Action**  **(from 2018 Hazard Mitigation Plan)** | | **Status** | | | | | **Additional Comments** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No Progress /**  **Unknown** | **In Progress** | **Continuous** | **Completed** | **Discontinued** |
| **1** | Sandy Shore Drive Relocation (from 2006 plan)  – Chronic flooding on Sandy Shore Drive off River Road will require the road to be relocated to prevent further damage by the Delaware River. | X |  |  |  |  |  |
| **2** | Sandy Shore Drive and River Road Drainage Improvements (from 2006 plan) – Increase water management capacity with additional basins and larger piping to alleviate damage to two township roads and residents. | X |  |  |  |  |  |
| **3** | Creek Road at Fox Gap Road Culvert Improvements (from 2006 plan) – Install a larger box culvert. |  |  |  | X |  |  |
| **4** | Stormwater Improvements at 288 Slateford Road (from 2006 plan) – Increase pipe capacity to alleviate severe flooding that impacts two residents, PennDOT, Monroe County Rail Authority, Norfolk Southern Rail, and UMBT. |  |  |  | X |  |  |
| **5** | Enhance tree management programs throughout the Township to control power outages and debris management. (from 2006 plan) |  | X |  |  |  |  |
| **6** | Riverton Road Drainage Relocation – relocated drainage pipe south of River Road that has resulted in significant road damage. | X |  |  |  |  |  |
| **7** | Carolee Road Drainage Improvements – install new inlet box, pipe and a longer retention basin to prevent further flooding of road and homes located along Carolee Lane. |  | X |  |  |  |  |
| **8** | Deer Run Lane Swale Improvements – Install larger swale with riprap protection to alleviate washouts on Deer Run Lane, ¼ mile above Hemlock. |  |  |  | X |  |  |
| **9** | Quakerplain Road Culvert Improvements – Install box culvert to alleviate stormwater damage to Quakerplain Road below Persimmon Lane. | X |  |  |  |  |  |
| **10** | 1855 Ridge Road Flood Protection – Install new piping and two new inlet boxes to manage stormwater and mitigate flooding to properties along Ridge Road. | X |  |  |  |  |  |
| **11** | National Park Drive Culvert Improvement – Install box culvert to manage stormwater and alleviate road damage. |  |  |  | X |  |  |
| **12** | Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Specifically identified is Kovar Lane (private road) that floods during significant flood events and prevents ingress/egress to residents.  Phase 1: Identify appropriate candidates for retrofitting based on cost- effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | X |  |  |  |  |  |
| **13** | 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.  Phase 1: Identify appropriate candidates for relocation based on cost- effectiveness versus retrofitting.  Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | X |  |  |  |  |  |
| **14** | Maintain compliance with and good standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.  Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP- related continued compliance actions identified below. |  | X |  |  |  |  |
| **15** | Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction:  - Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.  - Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.  - Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.  - Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding. | X |  |  |  |  |  |
| **16** | Begin and/or continue 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). | X |  |  |  |  |  |
| **17** | Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. | X |  |  |  |  |  |
| **18** | Have designated NFIP Floodplain  Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and/or pursue relevant continuing education training such as FEMA Benefit-Cost Analysis. | X |  |  |  |  |  |
| **19** | Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the community’s current compliance with the NFIP is established. | X |  |  |  |  |  |
| **20** | Obtain and archive elevation certificates for NFIP compliance. | X |  |  |  |  |  |
| **21** | Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0. | X |  |  |  |  |  |
| **22** | Complete the ongoing updates of the  Comprehensive Emergency Management Plans. | X |  |  |  |  |  |
| **23** | Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations. |  |  | X |  |  |  |
| **24** | Develop and maintain capabilities to process FEMA/PEMA paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/PEMA paperwork compilation, submissions, record keeping. | X |  |  |  |  |  |
| **25** | Work with regional agencies (i.e. County and PEMA) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers). | X |  |  |  |  |  |

**Notes:**

1. Actions not carried through to the 2023 Action Plan are so noted.
2. To maintain National Flood Insurance Program (NFIP) compliance, actions related to the NFIP were carried through to the 2023 Action Plan even if identified by the municipality as completed.

**2023 Mitigation Action Plan**

| **Mitigation Action** | | **Mitigation Action Category** | **Mitigation Technique Category** | **Hazard(s) Addressed** | **Priority**  **(H / M / L)** | **Estimated Cost** | **Potential Funding** | **Lead Agency / Department** | **Implementation Schedule** | **Applies to New and / or Existing Structures** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | Sandy Shore Drive Relocation (from 2006 plan)  – Chronic flooding on Sandy Shore Drive off River Road will require the road to be relocated to prevent further damage by the Delaware River. | 2 | Structure & Infrastructure | Flood | High | High | FEMA  Mitigation Grant  Programs;  municipal  budget for cost share | Township  Engineering and Public  Works | Long-term  (depending on funding) | Existing |
| **2** | Sandy Shore Drive and River Road Drainage Improvements (from 2006 plan) – Increase water management capacity with additional basins and larger piping to alleviate damage to two township roads and residents. | 15 | Structure & Infrastructure | Flood | Medium | High | FEMA  Mitigation Grant  Programs;  municipal  budget for cost share | Township  Engineering and Public  Works | Long-term  (depending on funding) | Existing |
| **3** | Creek Road at Fox Gap Road Culvert Improvements (from 2006 plan) – Install a larger box culvert. | 15 | Structure & Infrastructure | Flood | Medium | Medium | FEMA  Mitigation Grant  Programs;  municipal  budget for cost share | Township  Engineering and Public  Works | Long-term  (depending on funding) | Existing |
| **4** | Stormwater Improvements at 288 Slateford Road (from 2006 plan) – Increase pipe capacity to alleviate severe flooding that impacts two residents, PennDOT, Monroe County Rail Authority, Norfolk Southern Rail, and UMBT. | 15 | Structure & Infrastructure | Flood | Medium | Medium | FEMA  Mitigation Grant  Programs;  municipal  budget for cost share | Township  Engineering and Public  Works | Long-term  (depending on funding) | Existing |
| **5** | Enhance tree management programs throughout the Township to control power outages and debris management. (from 2006 plan) | 21 | Structure & Infrastructure | Windstorm,  Winter  Storm,  Utility  Interruption | High | Medium | Municipal Budget | Township Public Works | Short-term | Existing |
| **6** | Riverton Road Drainage Relocation – relocated drainage pipe south of River Road that has resulted in significant road damage. | 15 | Structure & Infrastructure | Flood | Medium | Medium | FEMA  Mitigation Grant  Programs;  municipal  budget for cost share | Township  Engineering and Public  Works | Short-term | Existing |
| **7** | Carolee Road Drainage Improvements – install new inlet box, pipe and a longer retention basin to prevent further flooding of road and homes located along Carolee Lane. | 15 | Structure & Infrastructure | Flood | Medium | Medium | FEMA  Mitigation Grant  Programs;  municipal  budget for cost share | Township  Engineering and Public  Works | Short-term | Existing |
| **8** | Deer Run Lane Swale Improvements – Install larger swale with riprap protection to alleviate washouts on Deer Run Lane, ¼ mile above Hemlock. | 15 | Structure & Infrastructure | Flood | Medium | Low | Municipal Budget | Township  Engineering and Public  Works | Short-term | Existing |
| **9** | Quakerplain Road Culvert Improvements – Install box culvert to alleviate stormwater damage to Quakerplain Road below Persimmon Lane. |  | Structure & Infrastructure | Flood | Medium | Low | Municipal Budget | Township  Engineering and Public  Works | Short-term | Existing |
| **10** | 1855 Ridge Road Flood Protection – Install new piping and two new inlet boxes to manage stormwater and mitigate flooding to properties along Ridge Road. | 15 | Structure & Infrastructure | Flood | Medium | Low | Municipal Budget | Township  Engineering and Public  Works | Short-term | Existing |
| **11** | National Park Drive Culvert Improvement – Install box culvert to manage stormwater and alleviate road damage. | 15 | Structure & Infrastructure | Flood | Medium | Medium | FEMA  HMGP;  municipal  budget for cost share | Township  Engineering and Public  Works | Short-term | Existing |
| **12** | Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Specifically identified is Kovar Lane (private road) that floods during significant flood events and prevents ingress/egress to residents.  Phase 1: Identify appropriate candidates for retrofitting based on cost- effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | 1 | Structure & Infrastructure | Flood | High | High | FEMA  Mitigation Grant  Programs and local  budget (or property  owner) for cost share | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  FEMA | Long-term  (depending on funding) | Existing |
| **13** | 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.  Phase 1: Identify appropriate candidates for relocation based on cost- effectiveness versus retrofitting.  Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | 2 | Structure & Infrastructure | Flood | High | High | FEMA  Mitigation Grant  Programs and local  budget (or property  owner) for cost share | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  FEMA | Long-term  (depending on funding) | Existing |
| **14** | Maintain compliance with and good standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.  Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP- related continued compliance actions identified below. | 3 | Local plans & Regulations | Flood | High | Low -  Medium | Municipal Budget | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  ISO FEMA | Ongoing | New &  Existing |
| **15** | Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction:  - Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.  - Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.  - Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.  - Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding. | 4 | Education  & Awareness | All Hazards | High | Low-  Medium | Municipal Budget | Municipality with support  from Planning Partners,  PEMA, FEMA | Short-term | N/A |
| **16** | Begin and/or continue 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). | 5 | Local plans  & Regulations | Flood;  Subsidence/ Sinkholes | High | Low | Municipal Budget | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  FEMA | Short-term | New &  Existing |
| **17** | Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. | 3 | Local plans  & Regulations | Flood | High | Low | Municipal Budget | NFIP  Floodplain  Administrator with support  from PA DEP,  PEMA, FEMA | Short-term | N/A |
| **18** | Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and/or pursue relevant continuing education training such as FEMA Benefit-Cost Analysis. | 6 | Local plans  & Regulations | Flood | Medium | Low | Municipal Budget | NFIP  Floodplain  Administrator | Short-term | N/A |
| **19** | Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the community’s current compliance with the NFIP is established. | 7 | Local plans  & Regulations | Flood | High | Low | Municipal Budget | NFIP  Floodplain  Administrator with support  from PA DEP,  PEMA, FEMA | Short-term | N/A |
| **20** | Obtain and archive elevation certificates for NFIP compliance. | 8 | Local plans  & Regulations | Flood | Medium | Low | Municipal Budget | NFIP  Floodplain  Administrator | Ongoing | N/A |
| **21** | Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0. | 9 | All  Categories | All Hazards | High | Low – High (for  5-year update) | Municipal Budget, possibly  FEMA  Mitigation  Grant  Funding for 5-year update | Municipality (via mitigation planning point of contacts)  with support  from Planning  Partners  (through their  Points of  Contact),  PEMA | Ongoing | New &  Existing |
| **22** | Complete the ongoing updates of the Comprehensive Emergency Management Plans. | 10 | Local plans  & Regulations | All Hazards | Medium | Low | Municipal Budget | Municipality with support from PEMA | Ongoing | New &  Existing |
| **23** | Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations. | 11 | All  Categories | All Hazards | Medium | Low | Municipal Budget | Municipality with support from  surrounding  municipalities and County | Ongoing | New &  Existing |
| **24** | Develop and maintain capabilities to process FEMA/PEMA paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/PEMA paperwork compilation, submissions, record keeping. | 12 | Education  & Awareness | All Hazards | Low | Medium | Municipal Budget | Municipality with support  from County,  PEMA, FEMA | Short-term | N/A |
| **25** | Work with regional agencies (i.e. County and PEMA) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers). | 13 | Education  & Awareness | All Hazards | Medium | Medium | Municipal  Budget,  FEMA  HMA grant programs | Municipality with support  from County,  PEMA | Short-,  long-term (depending on funding) | N/A |
| **26** | Help communities upstream and downstream of the Minsi Lake Dam and communities that could be impacted by dam failure (e.g., loss of water for firefighting activities if they rely on a reservoir) to better understand their risk to be better prepared during an emergency. | 27 | Education & Awareness | Dam Failure, Flood | High | Low | N/A | Municipality | Ongoing | N/A |

**Notes:**

***Estimated Costs:***

* Where actual project costs have been reasonable estimated: Low = < $10,000; Medium = $10,000 to $100,000; High = > $100,000;
* Where actual project costs cannot reasonably be established at this time:

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

**Medium** = Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment,

or the cost of the project would have to be spread over multiple years.

**High** = Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing

funding levels are not adequate to cover the costs of the proposed project.

***Potential Funding (FEMA HMA):***

* **BRIC =** Building Resilient Infrastructure andCommunities
* **FMA** = Flood Mitigation Assistance Grant Program
* **HMGP** = Hazard Mitigation Grant Program
* **HSGP** = Homeland Security Grant Program
* **EMPG** = Emergency Management Performance Grant

***Implementation Schedule:***

* **Short Term** = 1 to 5 years
* **Long Term** = 5 years or greater
* **DOF** = Depending on Funding

***Applies to New and/or Existing Structures:***

* **N/A** = Not Applicable