**Lower Macungie Township, Lehigh County Annex**

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

|  |  |
| --- | --- |
| **Primary:** | **Alternate:** |
| Vince Tranguch  Deputy Director of Community Development  Zoning Officer  3400 Brookside Road, Macungie, PA 18062  610-966-4343  vtranguch@lowermac.com | Nathan Jones  Director of Community Development  3400 Brookside Road, Macungie, PA 18062  610-966-4343  njones@lowermac.com |

**Municipal Profile**

Lower Macungie Township is a residential suburban community located in Lehigh County, immediately west of the City of Allentown. The Township currently encompasses 22.9 square miles and has a population of 32,426 (2020 Census). The township is bordered by; Upper Macungie Township to the northwest; Salisbury Township and Emmaus Borough to the east; and Upper Milford Township and Berks County to the south and southwest. Lower Macungie is a mixed-use community that encompasses, residential, commercial, rural, industrial and warehousing uses within it boundaries along with preserved areas.

Little Lehigh Creek and Swabia Creek wind through the township draining from sources in Berks and Lehigh Counties. Swabia Creek joins the Little Lehigh Creek in Lower Macungie Township and then drains into the Lehigh River in Allentown.

Lower Macungie’s main north south roads are Route 100, Spring Creek Road, Brookside Road, and Route 29 in the extreme east. Main east-west roads include U.S. Route 222 (which interchanges with Interstate 78 / Highway 309 in the extreme north,) Lower Macungie Road, and Mountain Road to the south.

**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.

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| --- | --- |
| Vincent Tranguch, Deputy Director of Community Development  Role: Administration | Nathan Jones, Director of Community Development  Role: Oversee Township Planning and Land Development |
| Vincent Tranguch, Zoning Officer/Floodplain Administrator  Role: Review FEMA maps and floodplain ordinance | Bryan McAdam, CKS Engineers  Role: Land Development plan review |
| Dennis Hinkel, Public Works Director  Role: Review re-occurring flooding issues known to township roads and property | Barbara Ferri: Emergency Management Agency Director  Role: Review for compliance to NIMS in case of emergency |
|  | |

*\*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.

Mack Trucks

Smooth-On

Community Associations

East Penn School District

Gather input and resources that these corporations can offer.

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.

Current: Include information in newsletters, hold public meeting for input from residents. Lower Macungie Township publishes a semi-annual newsletter to keep citizens informed on Township happenings. A portion of every issue of this newsletter is dedicated to supplying information on NPDES, MS4, MCM’s and a variety of other subjects related to runoff pollution, storm water management and clean water.

Past: Same

**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 | FPA - L273: Floodplain Management Course Completed – July 2019 |
| Is floodplain management an auxiliary function? | Community FPA | No, primary |
| Provide an explanation of NFIP administration services (e.g., permit review, GGIS, education or outreach, inspections, engineering capability) | Community FPA | Mapping, GIS, plan review, permitting |
| What are the barriers to running an effective NFIP program in the community, if any? | Community FPA | Public Education and buy-in |
| **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)? |  | 2015 |
| Is a CAV or CAC scheduled or needed? |  | Yes |
| **3. Regulation** | | |
| When did the community enter the NFIP? | NFIP Community Status Book | 6/28/1974 |
| Are the Flood Insurance Rate Maps (FIRMs) digital or paper?  How are residents assisted with mapping? | Community FPA | Paper |
| Do floodplain regulations meet or exceed FEMA or State minimum requirements?  If so, in what ways? | Community FPA | Exceed; Lower Macungie Township regulates properties in the 500-year floodplain |
| Describe the permitting process | Community FPA, State, FEMA NFIP | Zoning review prior to permit issuance |
| **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, but planning to enroll - applied in 2016 |
| If so, what is the community’s CRS Class Ranking? | Flood Insurance Manual (http://www.fema.gov/floodinsurancemanual.gov) | N/A |
| What categories and activities provide CRS points and how can the Class be improved? |  | N/A |
| Does the plan include CRS planning requirements? | Community FPA, FEMA CRS Coordinator, or ISO representative | N/A |

**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.

Assisted living facilities

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

East Penn School District – 4 facilities in the township

1. **Economy**

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

Mack Trucks

Walmart

Smooth-On

Hamilton Crossings

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.

Township acquisition of floodplain areas within the township

Greenway protection and improvement planning

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.

Few structures in floodplain from original farming developments

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

Buckeye Pipeline distribution lines

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

Buckeye Pipeline Tank Farm

Norfolk Southern railroad traverses the Township

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

Shoemaker Elementary School

Eyer Middle School

Brandywine Fire Station

Wescosville Fire Station

Lower Macungie Township Emergency Management Agency Operations Center

Lower Macungie Middle School

Willow Lane Elementary School

Lower Macungie Township Community Center

Lower Macungie Township Public Works Building

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

Log Haus – Lower Macungie Township Historical Building – Wescosville Park

Lower Macungie Township Historical Society – Camp Olympic

**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 |  |  | Planning | S | + |  |  |  |
| Capital Improvement Plan | X |  |  | Township Administration | N | + |  |  |  |
| Economic Development Plan |  |  |  |  |  |  |  |  |  |
| Continuity of Operations Plan |  |  |  |  |  |  |  |  |  |
| Stormwater Management Plan / Ordinance | X | Updated 2011 |  | Planning/PW  Chapter 23 A | S | + |  |  | Lower Macungie Township Ordinance Chapter 23 A |
| Open Space Management Plan (or Parks/Rec., Greenways Plan) | X | Adopted 11/2012 |  | Planning/Public Works | S | + |  |  | Lower  Macungie  Township Greenway Plan incorporates 500-year floodplain. |
| Natural Resource Protection Plan | X | 1998 |  | Zoning | S | + |  |  | Environmental  Protection  Areas - Part 19  Zoning  Ordinance |
| Transportation Plan | X |  |  | LVPC | S | + |  |  |  |
| Historic Preservation Plan |  |  | X | Planning | N | + |  |  |  |
| Floodplain Management Plan | X |  |  | Zoning |  |  |  |  | Lower Macungie Township Z.0. Chapter 27A |
| Farmland Preservation | X | 2005 |  | Planning | S | + |  |  | Included in comprehensive plan |
| Evacuation Plan |  |  |  |  |  |  |  |  |  |
| Disaster Recovery Plan |  |  |  |  |  |  |  |  |  |
| Hazard Mitigation Plan | X | 2018 |  |  |  |  | N/A |  |  |
| Emergency Operations Plan | X | 2017 |  |  |  |  |  |  |  |
| Zoning Regulations | X | Updated 2019 |  | Planning,  Zoning | S | + |  |  |  |
| Floodplain Regulations | X | Updated 2019 |  | Planning,  Zoning | S | + |  |  |  |
| NFIP Participation | X | 1974 |  | Planning,  Zoning | S | - |  |  |  |
| Building Code | X | PA UCC  2004 |  | Planning,  Zoning | S | - |  |  |  |
| Fire Code | X | Updated  2019 |  | Planning,  Zoning | S | + |  |  |  |
| Other | X | Updated2023 |  | Planning | S | + |  |  | Official Map - allows acquisition of prime agricultural land and floodplains. |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |  | Planning | - |  |  |
| Planners or engineers (with natural and / or human-caused hazards knowledge) | x |  | Planning | - |  |  |
| Engineers or professionals trained in building and / or infrastructure construction practices (including building inspectors) | x |  | Planning | - |  |  |
| Emergency Manager | x |  | Administration | - |  |  |
| Floodplain administrator / manager | x |  | Zoning | - |  |  |
| Land surveyors | x |  | Engineer | - |  |  |
| Staff familiar with the hazards of the community | x |  | Planning | - |  |  |
| Personnel skilled in Geographical Information Systems (GIS) and / or FEMA’s HAZUS program | x |  | Planning | - |  |  |
| Grant writers or fiscal staff to handle large / complex grants | x |  | Planning | - |  |  |
| 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 |  | Township Administration | Yes | Additional funding | Township owned property mitigation |
| Community Development Block Grants (CDBG) | X |  | Administration | Limited ability to utilize |  |  |
| Special purposes taxes | x |  | Administration | + |  | Tax levied for open space aquisition |
| Gas / Electricity utility fees |  |  |  |  |  |  |
| Water / Sewer fees | X |  | Township Administration | No | Utilized to address I&I issues/maintenance |  |
| Stormwater utility fees |  | x |  | - | Considering as MS4 in future |  |
| Development impact fees | X |  | Planning | Yes | Used for traffic and open space future acquisition | Increase land dedication rights since 2013 for open space |
| General obligation, revenue, and / or special tax bonds | X |  | Township Administration | Yes |  | Township line of credit used for open space acquisition |
| Partnering arrangements or intergovernmental agreements | X |  | Planning/Engineering | Yes |  | Partner with Lehigh Valley Planning Commission and Lehigh County Conservation District Act 167 administration |
| Other | X |  | Township Administration | Yes | Additional funding | Acquisition of open space since 2013 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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** |
| **4. Education & Outreach** | Firewise Communities Certification |  | x |  |  |  |  |
| StormReady Certification |  | x |  |  |  |  |
| Natural disaster or safety-related school programs |  | x |  |  |  |  |
| Ongoing public education or information programs such as, responsible water use, fire safety, household preparedness, and environmental education. | X |  | Township Administration | Yes |  | Newsletter published quarterly. Website updates as needed |
| Public-private partnership initiatives addressing disaster related issues. | X |  | Township Administration | Yes |  | Ongoing with Buckeye Pipeline and Lower Macungie Township Fire Department |
| Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | X |  | Township Environmental Advisory Council and Emergency Management |  |  |  |
| Other | X |  | Committees of Board of Commissioners | Yes |  | Internal Safety Committee Public Safety Committee |

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| --- | --- | --- | --- | --- | --- | --- |
| **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 |  |  |
| Administrative and Technical |  | X |  |  |  |
| Financial |  | X |  |  |  |
| Education and Outreach |  | X |  |  |  |

**Known or Anticipated Future Development / Redevelopment**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Development /**  **Property Name** | **Type of Development** | **Number of Structures** | **Location** | **Known Hazard Zone** | **Description / Status** |
| Schaefer Run Commons West | 55 and over  (6 models) | 112 units | 1550 PA Route 100 (?)  PINs?--546436126075,  546434588248,  546445195577 | No | Vacant - Proposed Development  Jaindl - Open Space = Floodplain (48% of development site)  ~108 acres, portion in Upper Macungie Township  (157 units) will be built first |
| Park Side Crossings |  | 12 | 3510 Macungie Road | No | 12-lot residential development |
| Macungie Crossing | Anchor + up to 5 stores |  | 5877 Hamilton Boulevard | No | Shopping Center, 27 acres |
| Farr Tract |  |  | Lower Macungie Road and Cedar Crest Blvd | No | 38-17 lots Single Family Dwellings |
| Woodmont | Coordinated Commercial |  | 3535 Grandview Drive | No | Apartments and storefront |
| LVSIP | Warehouses |  | 3100 Alburtis Rd, 2929 &  3041 Schoeneck Rd | No | 1/3 occupied? |
| Red Maple Acres | Mobile home park | 29 | 1170 Grange Road | No | Mobile Home Park - 29 units |
| Millbrook Farms | Single Family Dwellings | 45 | Sauerkraut &  Indian Creek Roads | No | Complete |
| Hillview Farms | Single Family Dwellings | 24 | 900 Hillview Road | No | Single Family Dwellings - 24 units |
| Kratzer Farm | Open and Ag | ------- | 1966 Willow Lane | Includes floodplain | ~30 acres of open space |
| Spring Creek Properties | Industrial/  Commercial/  Residential/Park | ? | Congdon Hill Drive, Spring  Creek Road, Mertztown  Road | Includes floodplain | 3 lots - Industrial/warehouses to be built:  3 - Commercial, 3 industrial, 2 parks, 1 - 37-acre tract easement? And 2 residential - 300+?  2023 - 1 warehouse lot left and commercial pad site |
| Hamilton Crossings | Mixed Use | ? | Area north of bypass | No | Mixed Use - Residential & Commercial or All Commercial  PLANNING STAGE |
| Yen Family | Single Family Dwellings | 4 | East Texas Road near Brookside Rd | No | 2 parcels - 4 lots  COMPLETE |
| West Valley Marketplace | Commercial | 1 | 1142 Mill Creek Road | No | Lot 21A - Commercial |
| Weiner Tract | Residential | ? | Sauerkraut &  Brookside Roads | Includes floodplain | PRESERVED as 5 Farmettes |
| Lichtenwalner Farm | Residential | ? | Indian Creek Road | Runoff, floodplain possible | PRIVATE PRESERVATION |
| Dorney Tract | Residential | ? | near Camp Olympic | No | TOWNSHIP PRESERVATION |

**Natural & Non-Natural Event History Specific to Lower Macungie Township**

|  |  |  |
| --- | --- | --- |
| **Type of Event and Date(s)** | **FEMA Disaster #**  **(if applicable)** | **Local Damage(s) or Loss(es)** |
| Winter Storm Jonas – 1/2016 | DR-4267-PA | Public works manpower/material; no loss to infrastructure |
| Pennsylvania COVID-19 Pandemic – 1/2020 | DR-4506-PA | Emergency Protective measures to combat COVID-19 Pandemic. |

**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** | Establish riparian buffers. |  |  | X |  |  | Buffers established with new development |
| **2** | North Brookside Road Stream Clearing – Large trees fallen into the creek have resulted in flooding to a private residence. Efforts to clear snags have been limited by DEP restrictions and private property access issues. |  |  | X |  |  | Ongoing property protection for bordering properties |
| **3** | Weilers Road Bridge – Bridge is too low, causing debris to get caught under bridge resulting in flooding to two residences on Mertztown Road. DEP restrictions limit ability to clear debris. Bridge needs to be elevated, or routine debris clearing permit(s) need to be instated. |  |  | X |  |  | Ongoing monitoring for hazards |
| **4** | Retrofit (e.g. elevate) structures located in hazard- prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Specifically identified are the following:  - Mill Creek Road – 1 property  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 |  | Action not carried through to 2018 Action Plan. |
| **5** | 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.  Specifically identified are the following:   * Spring Creek Road – 4 properties * Lower Macungie Road – 1 property * Mertztown Road – 2 properties   Orchid Place – 1 property  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 |  |  |  | Funding availability |
| **6** | 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 |  |  |  |
| **7** | 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 |  |  |  |  |
| **8** | Begin and/or continue the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements). | X |  |  |  |  |  |
| **9** | Determine if a Community Assistance Visit (CAV) or Community Assistance Contact  (CAC) is needed, and schedule if needed. |  | X |  |  |  | CAV Completed. No Progress further. No Progress since 2018 |
| **10** | 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 |  |  |  |  |
| **11** | Enroll in the NFIP Community Rating System (CRS) Program. | X |  |  |  |  | Action revised based on municipal input and carried through to the 2018 Action Plan. |
| **12** | Obtain and archive elevation certificates for NFIP compliance. |  | X |  |  |  |  |
| **13** | Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0. |  |  | X |  |  |  |
| **14** | Complete the ongoing updates of the Comprehensive Emergency Management Plans. |  |  | X |  |  |  |
| **15** | Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations. |  |  | X |  |  |  |
| **16** | 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 |  |  |  |  |  |
| **17** | 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** | | **Regional 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** | Establish riparian buffers. | 14 | Natural Systems Protection | Flood | Medium | Low | Municipal Budget | Planning | Short-term | N/A |
| **2** | North Brookside Road Stream Clearing – Large trees fallen into the creek have resulted in flooding to a private residence. Efforts to clear snags have been limited by DEP restrictions and private property access issues. | 15 | Natural Systems  Protection | Flood | Medium | Low | Municipal Budget | Lower  Macungie  Road  Department | Short-term | Existing |
| **3** | Weilers Road Bridge – Bridge is too low, causing debris to get caught under bridge resulting in flooding to two residences on Mertztown Road. DEP restrictions limit ability to clear debris. Bridge needs to be elevated, or routine debris clearing permit(s) need to be instated. | 25 | Structure &  Infrastructure | Flood | Medium | Medium | Federal,  State,  County  Grant  Funding;  Municipal budget | Lower  Macungie  Township and PennDOT | Short-term  (depending upon funding) | Existing |
| **4** | Retrofit (e.g. elevate) structures located in hazard- prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Specifically identified are the following:  - Mill Creek Road – 1 property  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 Grants  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 upon funding) | Existing |
| **5** | 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.  Specifically identified are the following:   * Spring Creek Road – 4 properties * Lower Macungie Road – 1 property * Mertztown Road – 2 properties   Orchid Place – 1 property  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  Municipal budget (or property  owner) for cost share | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  FEMA | Long-term  (depending upon funding) | Existing |
| **6** | 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 | Municipal Budget | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  ISO FEMA | Ongoing | New &  Existing |
| **7** | 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  (depending upon funding) | N/A |
| **8** | Begin and/or continue the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements). | 5 | Local plans  & Regulations | Flood | High | Low | Municipal Budget | Via Mun.  Engineer / NFIP Floodplain  Admin.) w/ support from PEMA, FEMA | Short-term  (depending upon funding) | New &  Existing |
| **9** | 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 PADEP,  PEMA, FEMA | Short-term | N/A |
| **10** | 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  (depending upon funding) | N/A |
| **11** | Enroll in the NFIP Community Rating System (CRS) Program. | 7 | Local plans  & Regulations | Flood | High | N/A | Municipal Budget | Planning/Zoning | Coordination with FEMA | N/A |
| **12** | Obtain and archive elevation certificates for NFIP compliance. | 8 | Local plans  & Regulations | Flood | Low | Low | Municipal Budget | NFIP Floodplain Administrator | Ongoing | N/A |
| **13** | 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 |
| **14** | 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 |
| **15** | 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 | Ongoing | New &  Existing |
| **16** | 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 |
| **17** | 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-term  (depending upon funding) | 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