**City of Bethlehem, Lehigh and Northampton County Annex**

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

|  |  |
| --- | --- |
| **Primary:** | **Alternate:** |
| Bob Novatnack  Emergency Management Coordinator  10 E. Church Street, Bethlehem, PA 18018  610-865-7140  rnovatnack@bethlehem-pa.gov | Warren Achey  Fire Chief & Deputy Emergency Management Coordinator  10 E. Church Street, Bethlehem, PA 18018  610-865-7161  wachey@bethlehem-pa.gov |

**Municipal Profile**

Bethlehem City is unique in that it is located within both Lehigh and Northampton Counties. It has a total population of 75,781 (2020 Census), making it the second most populous of the Lehigh Valley’s three cities. Bethlehem City is located in the south-central portion of the Lehigh Valley, bridging Lehigh County’s east-central region with Northampton County’s southwest. The city has an area of 19.4 square miles. The City is bordered by Bethlehem Township to the east and north; Hanover Township to the north; Hanover Township (Lehigh County) to the northwest; the City of Allentown (Lehigh County) to the west; Fountain Hill Borough (Lehigh County) and Salisbury Township (Lehigh County) to the southwest; Hellertown Borough to the south; Lower Saucon Township to the south and east; and Freemansburg Borough to the east.

The Lehigh River runs east-west through the middle of the city. In the area of the Northampton County section of the city north of the Lehigh River, the Monocacy Creek flows south from the city’s northern border and forms the western border of the northern section of the city until just north of Schoenersville Road. In the area of the Northampton County section of the city south of the Lehigh River, the Saucon Creek flows northward from Lower Saucon Township, briefly forming the southeast border of the city with Hellertown Borough. There are no major waters through the Lehigh County section of the city.

Several major roadways serve Bethlehem City. Interstate 78 travels east-west through the southern section of the city. US Route 22 travels east-west through and adjoining the northern section of the city. Other major east-west routes include Easton Avenue through the center of the city, Freemansburg Avenue just south of and parallel to Easton Avenue, Macada Road in the north, Broad Street just north of the Lehigh River, and 4th Street just south of the Lehigh River. PA Route 412 travels north from Hellertown into the section of the city south of the Lehigh River, and turns west onto E. 4th Street, Daley Avenue, and 3rd Street, then south on Brodhead Avenue and southeast on Broadway, before terminating at PA Route 378. PA Route 378 comes north into the city from Lower Saucon Township, crosses the Lehigh River, and meanders north to US Route 22 in the northwest section of the city, where it terminates with its interchange to US Route 22. Other major north-south roadways include 8th Avenue in the southwest section of the city, and Center Street and Linden Street in the central section. Lehigh Valley International Airport, the city’s primary airport, is located just to the northwest of the city, in Hanover Township.

**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.

|  |  |
| --- | --- |
| Bob Novatnack, Emergency Management Coordinator  Role: EMA | Warren Achey, Fire Chief & Deputy Emergency Management Coordinator  Role: EMA |
| Craig Peiffer, Floodplain Manager  Role: Floodplain Administrator | Ed Boscola, Director of Water and Sewer  Role: Water |
| Mike Al-Kahl, Director of Public Works  Role: Public Works | Greg Cryde, Radio Shop Supervisor  Role: Radio/Technology |
| Kristen Wenrich, Director of Health  Role: Health | |

*\*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.

Wind Creek Casino, Lehigh University, neighborhoods and churches

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: Email, Newsletter, Social Media

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 | No |
| 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 | Permit Review, GIS, inspections |
| What are the barriers to running an effective NFIP program in the community, if any? | Community FPA | Funds for community education |
| **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)? |  | 2016 |
| Is a CAV or CAC scheduled or needed? |  | No |
| **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 |
| Do floodplain regulations meet or exceed FEMA or State minimum requirements?  If so, in what ways? | Community FPA | Exceed |
| Describe the permitting process | Community FPA, State, FEMA NFIP | Applications completion, engineering review, inspections |
| **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 | Unknown |
| How many structures are exposed to flood risk within the community? | Community FPA or GIS Analyst | Unknown |
| Describe any areas of flood risk with limited NFIP policy coverage | Community FPA or  FEMA Insurance Specialist | None |
| **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) | 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.

Students (K through College)

Assisted Living Facilities

Group Homes

Three Bethlehem Housing Authority (BHA) Communities

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

Wind Creek Casino guests

College Visitors

Artsquest

Historic Bethlehem

1. **Economy**

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

LVIP PARK

Wind Creek Casino

Just Born

Lehigh University

LVHC Muhlenberg

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.

None

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.

Historic Moravian Industrial Quarter

Older residential neighborhoods

South Bethlehem

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

Wastewater Treatment Plant

Water Treatment Facilities

Railroad Network

SCADA System

Radio System

Water Authority properties outside of the city

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

Several facilities throughout the city with hazmat

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

1 Major Hospital (Lehigh Valley Health Network – Muhlenberg

Police, Fire, EMS Facilities

Schools

Numerous doctor’s offices through the city affiliated with Lehigh Valley Health Network and St. Luke’s Health Network

Radio Facilities

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

Smithsonian Museum of Industrial History

Historic Moravian Campus

Artsquest Steelstacks Campus

Wind Creek Casino & Resort

**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 |  |  |  |  |  |  |  |  |
| Capital Improvement Plan | X |  |  |  |  |  |  |  |  |
| Economic Development Plan | X |  |  |  |  |  |  |  |  |
| Continuity of Operations Plan |  |  | X | EMA | S | + |  | Create and adopt plan. |  |
| Stormwater Management Plan / Ordinance | X |  |  |  |  |  |  |  |  |
| Open Space Management Plan (or Parks/Rec., Greenways Plan) | X |  |  |  |  |  |  |  |  |
| Natural Resource Protection Plan |  |  | X |  |  | + |  | Create and adopt plan. |  |
| Transportation Plan |  |  | X | EMA | S | + |  | Create and adopt plan. |  |
| Historic Preservation Plan | X |  |  |  |  |  |  |  |  |
| Floodplain Management Plan | X |  |  |  |  |  |  |  |  |
| Farmland Preservation |  |  |  |  |  |  |  |  |  |
| Evacuation Plan |  |  | X | EMA | S | + |  | Create and adopt plan. |  |
| Disaster Recovery Plan |  |  | X | EMA | S | + |  | Create and adopt plan. |  |
| Hazard Mitigation Plan | X | 2018 |  | EMA | S | + |  | Create and adopt plan. |  |
| Emergency Operations Plan | X | 1/2019 |  |  |  |  |  |  |  |
| Zoning Regulations | X |  |  |  |  |  |  |  |  |
| Floodplain Regulations | X |  |  |  |  |  |  |  |  |
| NFIP Participation | X |  |  |  |  |  |  |  |  |
| Building Code | X |  |  |  |  |  |  |  |  |
| Fire Code | X |  |  |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |  | Community & Economic Development | No | Additional Training |  |
| Planners or engineers (with natural and / or human-caused hazards knowledge) | X |  | Engineering | No | Additional Training |  |
| Engineers or professionals trained in building and / or infrastructure construction practices (including building inspectors) | X |  | Engineering | No | Additional Training |  |
| Emergency Manager | X |  | Emergency Management Agency | No | Additional Training |  |
| Floodplain administrator / manager | X |  | Community & Economic Development | No | Additional Training |  |
| Land surveyors | X |  | Community & Economic Development | No | Additional Training |  |
| Staff familiar with the hazards of the community | X |  | All Departments | No | Additional Training |  |
| Personnel skilled in Geographical Information Systems (GIS) and / or FEMA’s HAZUS program | X |  | Community & Economic Development, Engineering | No | Additional Training |  |
| Grant writers or fiscal staff to handle large / complex grants | X |  | Various Departments | No | Additional Training |  |
| Other |  |  |  |  |  |  |

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| **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 |  |  |  |  |  |
| Community Development Block Grants (CDBG) | X |  | Community & Economic Development |  |  |  |
| Special purposes taxes | X |  | Financial Services |  |  |  |
| Gas / Electricity utility fees | X |  | Financial Services |  |  |  |
| Water / Sewer fees | X |  | Financial Services |  |  |  |
| Stormwater utility fees | X |  | Financial Services |  |  |  |
| Development impact fees | X |  | Financial Services |  |  |  |
| General obligation, revenue, and / or special tax bonds | X |  | Financial Services |  |  |  |
| Partnering arrangements or intergovernmental agreements | X |  | Legal Bureau |  |  |  |
| Other |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |  | Fire Department, HazMat and Bomb Squad |  |  |  |
| StormReady Certification |  | X |  | No | Obtain StormReady certification |  |
| Natural disaster or safety-related school programs | X |  | School District, Fire, Police and Health Depts. | No |  |  |
| Ongoing public education or information programs such as, responsible water use, fire safety, household preparedness, and environmental education. | X |  | Fire, Health and Police Depts. | No |  |  |
| Public-private partnership initiatives addressing disaster related issues. | X |  | Multiple | No | Continue to engage with businesses |  |
| Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | X |  | Multiple | No | Continue to engage with community groups. |  |
| Other |  |  |  |  |  |  |

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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** |
| --- | --- | --- | --- | --- | --- |
| Former Bethlehem  Steel Property | Commercial | Many | I-78 area |  |  |
| Casino Expansion | Commercial |  | 77 Wind Creek Boulevard |  | Under Construction |
| Royal Farms Market /  Gas Station | Commercial |  | 2355 Avenue A |  | Plans Submitted |
| Wawa Gas Station /  Convenience Store | Commercial |  | 774-784 Hellertown Road |  | Plans Approved |
| Autozone | Commercial |  | 505 Wyandotte Street |  | Plans Approved |
| Wilbur Mansion Hotel &  Event Center | Commercial |  | 202 Wyandotte Street |  | Under Construction |
| Westgate Mall  Public Improvements | Commercial |  |  |  | Plans Approved |
| 2011 City Line Road Hotel | Commercial |  |  |  | Plans Approved |
| Martin Tower | Mixed Use |  | 8th Avenue |  |  |
| Former Bethlehem  Steel Blast Furnaces | Mixed Use | Many | 1st & 2nd Streets |  | Brownfield |
| Former National  Guard Armory | Residential | 1 | 2nd Avenue |  | Under Construction |
| Overlook at Saucon Creek | Residential |  |  |  | Under Construction / Portions Complete |
| Park View Commons | Residential |  |  |  | Under Construction / Portions Complete |
| Riverview Heights –  Edward Street | Residential |  |  |  | Under Construction |
| Saucon Square Condominiums | Residential |  |  |  | Under Construction / Portions Complete |
| Silk Mill Apartments  (Phase 1 & 2) | Residential |  |  |  | Phase 1 Complete / Phase 2 Plans Pending |
| Stever Mills on Creek Road | Residential |  |  |  | Under Construction / Portions Complete |
| Villas at Saucon Valley | Residential |  |  |  | Under Construction / Portions Complete |
| 802-804 Atlantic Street Subdivision | Residential |  |  |  | Plans Approved |
| 565 Lehigh Street Apartments | Residential |  |  |  | Under Construction |
| 2321 Linford St. Apartments | Residential |  |  |  | Under Construction |
| 1535 Butztown Road Townhouses | Residential |  |  |  | Under Construction |
| Selfridge & Jackson Streets Townhouses | Residential |  |  |  | Plans Submitted |
| Church Apartments | Residential |  | 938 E. 4th Street |  | Under Construction |
| 10-16 W. Goepp Street Apartments | Residential |  |  |  | Under Renovation |
| Cottages @ Monocacy Manor | Residential / Senior |  |  |  | Under Construction / Portions Complete |
| Turnberry Mews | Residential / Senior |  |  |  | Under Construction / Portions Complete |
| Moravian Village Memory Care Facility | Institutional |  |  |  | Plans Approved |
| NMIH | Institutional |  |  |  | Under Construction / Portions Complete |
| Terrace Homes at Northwood Gardens (Kirkland Village) | Institutional |  |  |  | Construction Complete 2021 |
| Lehigh University –  Rauch Addition | Institutional |  | 461 Webster Street |  | Under Construction |
| Lehigh University –  Bridge West North | Institutional |  |  |  | Under Construction |
| Lehigh HST | Institutional |  | 124 E. Morton Street |  | Under Construction |
| Terrace Homes at  Northwood Gardens | Institutional |  | 2365 Madison Avenue |  | Under Construction / Portions Completed |
| Greenway Commons Ph. 1,2,3 | Mixed Use | 3 | 422-630 E. 3rd St. |  | Under Construction / Phase 1 Complete |
| James Best Residential – Taylor Court | Mixed Use |  |  |  | Under Construction |
| Polk Street Parking Garage | Mixed Use | 1 |  |  | Plans Approved |
| 3rd & New Street Office Building | Mixed Use | 1 |  |  | Under Construction / Portions Complete |
| 267 Cherokee Street  (Wilbur Mansion) | Mixed Use |  |  |  | Under Construction |
| 1338 E. Fourth Street | Mixed Use | 1 |  |  | Under Construction |
| Benner | Mixed Use |  | 548 N. New Street |  | Plans Approved |
| Laros Apartments | Mixed Use |  | 601-699 E. Broad Street |  | Under Renovation |
| Pektor Mixed Use | Mixed Use |  | 404 E. 3rd Street |  | Plans Submitted |
| Skyline West | Mixed Use |  | 143 W. Broad Street |  | Plans Submitted |
| S. New Street Apartments | Mixed Use |  |  |  | Plans Submitted |
| Third & Taylor | Mixed Use |  |  |  | Plans Submitted |
| 4th & Vine | Mixed Use |  |  |  | Plans Submitted |
| Boyd | Mixed Use |  |  |  | Plans Submitted |
| 250 E. Broad Street | Mixed Use |  |  |  | Plans Submitted |
| Lofts at Linden | Mixed Use |  | 2950-70 Linden Street |  | Plans Approved |
| 14-36 W. 3rd Street | Mixed Use |  |  |  | Plans Submitted |
| LVIP VII LPT Warehouse (Lots 3,4,5) | Industrial |  | 10 Emery Street |  | Under Construction / Portions Complete |
| LVIP VII Lot 13 | Industrial |  | Spillman Drive |  | Plans Approved |
| LVIP VII Lot 81 | Industrial |  | 1025 Feather Way |  | Plans Approved |
| LVIP VII – Ecopax | Industrial |  | 1355 Easton Road |  | Under Construction |
| Patriot Distribution (LVIP VII, Lot 14) | Industrial |  | 2120 Spillman Drive |  | Under Construction |
| 835 E. North Street (Bethlehem Pre-cast) | Industrial |  |  |  | Plans Approved |
| 3001 Commerce Center Blvd. (Lot 3, Majestic) | Industrial |  |  |  | Plans Approved |
| 3633 Commerce Center Blvd. (Lot 4, Majestic) | Industrial |  |  |  | Plans Approved |
| 1125 Easton Road – Project Mustang | Industrial |  |  |  | Plans Approved |
| 3905 Commerce Center Blvd. | Industrial |  |  |  | Plans Approved |
| 3955 Commerce Center Blvd. | Industrial |  |  |  | Plans Approved |
| Majestic Lots 6 & 7 | Industrial |  | 3905 Commerce Center Boulevard |  | Plans Approved |
| 1405 Easton Road Expansion | Industrial |  |  |  | Under Construction |
| LVIP VII Lot #12 –  Flex Manufacturing | Industrial |  | 1920 Spillman Drive |  | Under Construction |
| LVIP VII Lot #81 | Industrial |  | 1025 Feather Way |  | Under Construction |

**Natural & Non-Natural Event History Specific to City of Bethlehem**

|  |  |  |
| --- | --- | --- |
| **Type of Event and Date(s)** | **FEMA Disaster #**  **(if applicable)** | **Local Damage(s) or Loss(es)** |
| Winter Storm Jonas – 1/23/2016 | DR-4267-PA | N/A |
| COVID-19 Pandemic – March, 2020 | DR-4506-PA | Emergency Protective measures to combat COVID-19 Pandemic. |
| Remnants of Hurricane Ida – August, 2022 | 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** | Sand Island Flood Protection (100 W. River Street) –Restore \ harden bank or install a levee along the creek in the park area. Park and recreation facilities are damaged by floodwaters from the Monocacy Creek. This area has flooded on numerous occasions in the last 10 years. |  | X | X |  |  |  |
| **2** | Westmont, Dearborn, Norwood Acquisitions (1800 blk. Westmont, 1800 blk. Norwood, 800 blk. Dearborn) - Acquire properties and restrict land use. Six or more homes in this area flood when the Saucon Creek over flows its banks. This has happened on numerous occasions in the last 10 years. The water can be up to 3 feet deep from street level. |  | X | X |  |  |  |
| **3** | Mauch Chunk Flood Protection and Acquisition (1200 – 1400 Mauch Chunk Road) - Restore\harden bank or install a levee along creek; acquire structures in area and restrict land use. Two businesses in this area sustain damage when the Monocacy Creek overflows its banks. This area has flooded on numerous occasions in the last 10 years. One business is retail and the second is a metal fabricator. |  | X | X |  |  |  |
| **4** | Monocacy Park Flood Protection (130 Illicks Mill Road) –Restore \ harden bank or install a levee along the creek in the park area. Park and recreation facilities are damaged by floodwaters from the Monocacy Creek. This area has flooded on numerous occasions in the last 10 years. |  | X |  |  |  |  |
| **5** | Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | X |  |  |  |  |  |
| **6** | 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 |  |  |  |  |  |
| **7** | 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 |  |  |  |  |  |
| **8** | 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 |  |  |  |  |  |
| **9** | 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 |  |  |  |  |  |
| **10** | Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. | X |  |  |  |  |  |
| **11** | 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 |  |  |  |  |  |
| **12** | 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 |  |  |  |  |  |
| **13** | Obtain and archive elevation certificates for NFIP compliance. | X |  |  |  |  |  |
| **14** | Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0. | X |  |  |  |  |  |
| **15** | Complete the ongoing updates of the  Comprehensive Emergency Management Plans. | X |  |  |  |  |  |
| **16** | Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations. | X |  |  |  |  |  |
| **17** | 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 |  |  |  |  |  |
| **18** | 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** | Sand Island Flood Protection (100 W. River Street) –Restore \ harden bank or install a levee along the creek in the park area. Park and recreation facilities are damaged by floodwaters from the Monocacy Creek. This area has flooded on numerous occasions in the last 10 years. | 24 | Structure and Infrastructure | Flood | Medium | High | Mitigation Grant Funding with City of Bethlehem funds for local match | Dept. of Parks and Public Property | Long-Term (depending on funding) | Existing |
| **2** | Westmont, Dearborn, Norwood Acquisitions (1800 blk. Westmont, 1800 blk. Norwood, 800 blk. Dearborn) - Acquire properties and restrict land use. Six or more homes in this area flood when the Saucon Creek over flows its banks. This has happened on numerous occasions in the last 10 years. The water can be up to 3 feet deep from street level. | 2 | Structure and Infrastructure | Flood | High | High | Mitigation Grant Funding with City of Bethlehem funds for local match | Dept. of Parks and Public Property | Long-Term (depending on funding) | Existing |
| **3** | Mauch Chunk Flood Protection and Acquisition (1200 – 1400 Mauch Chunk Road) - Restore\harden bank or install a levee along creek; acquire structures in area and restrict land use. Two businesses in this area sustain damage when the Monocacy Creek overflows its banks. This area has flooded on numerous occasions in the last 10 years. One business is retail and the second is a metal fabricator. | 3 | Structure and Infrastructure | Flood | High | High | Mitigation  Grant Funding; local match funds TBD | Dept. of Parks and Public Property | Long-Term (depending on funding) | Existing |
| **4** | Monocacy Park Flood Protection (130 Illicks Mill Road) –Restore \ harden bank or install a levee along the creek in the park area. Park and recreation facilities are damaged by floodwaters from the Monocacy Creek. This area has flooded on numerous occasions in the last 10 years. | 24 | Structure and Infrastructure | Flood | Medium | High | Mitigation Grant Funding with City of Bethlehem funds for local match | Dept. of Parks and Public Property | Long-term (depending on funding) | Existing |
| **5** | Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | 1 | Structure and Infrastructure | Flood | High | High | Mitigation Grant Funding with City of Bethlehem funds for local match | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA, FEMA | Long-term (depending on funding) | Existing |
| **6** | 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 and  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 |
| **7** | 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 and  Regulations | Flood | High | Low -  Medium | Municipal Budget | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  ISO FEMA | Ongoing | New &  Existing |
| **8** | 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 and  Awareness | All Hazards | High | Low -  Medium | Municipal Budget | Municipality with support from Planning Partners, PEMA, FEMA | Short-term | N/A |
| **9** | 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 and  Regulations | Flood;  Subsidence/ Sinkholes | High | Low | Municipal Budget | Municipality  (via Municipal  Engineer/NFIP Floodplain  Administrator) with support from PEMA,  FEMA | Short-term | New &  Existing |
| **10** | Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. | 3 | Local Plans and  Regulations | Flood | High | Low | Municipal Budget | NFIP  Floodplain  Administrator with support  from PADEP,  PEMA, FEMA | Short-term | N/A |
| **11** | 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 and  Regulations | Flood | Medium | Low | Municipal Budget | NFIP  Floodplain  Administrator | Short-term  (depending on funding) | N/A |
| **12** | 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 and  Regulations | Flood | High | Low | Municipal Budget | NFIP  Floodplain  Administrator with support  from PADEP,  PEMA, FEMA | Short-term | N/A |
| **13** | Obtain and archive elevation certificates for NFIP compliance. | 8 | Local Plans and  Regulations | Flood | Low | Low | Municipal Budget | NFIP  Floodplain  Administrator | Ongoing | N/A |
| **14** | 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,  PEMA | Ongoing | New &  Existing |
| **15** | Complete the ongoing updates of the Comprehensive Emergency Management Plans. | 10 | Local Plans and  Regulations | All Hazards | Medium | Low | Municipal Budget | Municipality with support from PEMA | Ongoing | New &  Existing |
| **16** | Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations. | 11 | All  categories | All Hazards | Medium | Low | Municipal Budget | Municipality w/ support from  Surrounding municipalities and County | Ongoing | New &  Existing |
| **17** | 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 and  Awareness | All Hazards | Low | Medium | Municipal Budget | Municipality with support  from County,  PEMA, FEMA | Short-term | N/A |
| **18** | 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 and  Awareness | All Hazards | Medium | Medium | Municipal budget,  FEMA  HMA grant programs | Municipality with support  from County,  PEMA | Short-term (depending on 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