

6.0 MITIGATION STRATEGY

6.1 Update Process

6.1.1 Overview

The mitigation strategy serves as the long-term road map to reduce the potential losses, vulnerabilities, and shortcomings identified in the Hazard Identification and Risk Assessment section. A typical mitigation strategy includes a list of goals and objectives, with mitigation actions to address the goals and objectives, that are then prioritized, based on the community's need. Goals are long-term aspirations about the resiliency of the community given the potential effects of hazards. Objectives are measurable strategies that participants have determined will be necessary to move closer to attaining each goal. Actions are the tasks that are proposed for realizing each objective. Each of the previous plan updates have included goals and objectives,

6.1.2 Changes from 2021

The 2021 Goals, Objectives, and Actions were reviewed and revised for this plan update. The steering committee reviewed the Goals and Objectives after project kick-off and identified opportunities to be more clear and concise in the organization and language used in the goals and objectives. The intentions of the goals and objectives remains unchanged. The 2021 strategy, and the previous plan updates, documented the county's unwavering commitment to risk reduction. The 2026 strategy reaffirms that commitment using slightly different words and prioritization.

Table 6.1-1 Review of 2021 Mitigation Strategy Goals and Objectives.

Goal/Objective #	Goal/Objective	2026 Revision
GOAL 1	Reduce possibility of injury/death to County residents and reduce potential damage to existing community assets (including residential properties, critical facilities, and infrastructure) due to natural and human-made hazards.	Revised language to "Reduce potential injury, death, and damage due to natural and human-made hazards."
Objective 1.A	Implement projects that protect properties, critical facilities, and infrastructure from hazards focusing on the 1% annual chance floodplain.	Changed language to remove exclusive focus on 1% floodplain in recognition of future risks.
Objective 1.B	Provide public outreach/education regarding strategies (e.g., floodproofing) for property owners in the 1% annual chance floodplain.	Moved under new Goal 2. Changed language to remove exclusive focus on 1% floodplain in recognition of future risks.
Objective 1.C	Address identified data limitations regarding lack of detailed information about individual structures located in the 1% annual chance floodplain.	Combined Objective 1.C with 1.G. Changed language to remove exclusive focus on 1% floodplain in recognition of future risks.
Objective 1.D	Identify and evaluate protection for hazardous material storage in floodplain.	Combined Objective 1.D with Objective 1.H.
Objective 1.E	Identify the most-vulnerable and critical existing structures and infrastructure due to the effects of severe weather.	Removed, as intent of objective is now covered under modified Objective 1.A.
Objective 1.F	Evaluate and prioritize communities that require warning systems and storm shelters.	Moved under Goal 5, which was modified to focus on HHPD,
Objective 1.G:	Utilize available County level datasets with characteristics of individual structures for improved hazard planning and outreach.	Combined Objective 1.C with 1.G. Changed language to remove exclusive focus on 1% floodplain in recognition of future risks.
Objective 1.H:	Identify and prioritize funding for transportation infrastructure projects that will reduce impact of hazards.	Combined Objective 1.D with Objective 1.H.
GOAL 2	Promote disaster-resistant future development	This was combined into Goal 1 as it focuses on damage to property. This change allows for the objectives to be streamlined.
Objective 2.A	Encourage and facilitate the development or revision of comprehensive plans and zoning/land-use ordinances to limit development in high-hazard areas.	Combined Objective 2.A and 2.B. Moved under Goal 1.

Goal/Objective #	Goal/Objective	2026 Revision
Objective 2.B	Encourage and facilitate the adoption of building codes that provide protection for new construction and substantial renovations from the effects of identified hazards.	Combined Objective 2.A and 2.B. Moved under Goal 1.
Objective 2.C	Provide adequate and consistent enforcement of ordinances and codes within and between jurisdictions.	Included in 2026 HMP under new Goal 3.
Objective 2.D	Implement hazard mitigation measures identified in other planning mechanisms and address hazard mitigation as appropriate in other planning mechanisms.	Moved under new Goal 3. Changed language to focus more on targeted integration.
GOAL 3	Promote hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population.	Continued to 2026 HMP as Goal 2.
Objective 3.A	Provide public education to increase awareness of hazards, opportunities for mitigation and to reduce the impact of disasters on all community members.	Included in 2026 HMP under new Goal 2. Changed language to be more concise.
Objective 3.B	Promote partnerships between the municipalities and the County to continue to develop a County-wide approach to identifying and implementing mitigation actions.	Included in 2026 HMP under new Goal 3.
Objective 3.C	Continue the promotion of disaster resistance in the business community via the hazard mitigation planning initiative	Included in 2026 HMP under new Goal 2. Changed language to focus more on the opportunity to partner with the business community.
GOAL 4	Protect natural resources within hazard areas and use them to reduce risk and losses.	Continued to 2026 HMP.
Objective 4.A	Implement natural resource planning and projects that assist in hazard mitigation.	Expanded into three more detailed objectives.
GOAL 5	Implement structural projects to reduce the impacts of hazards.	Modified language to reflect focus of goal on HHPD.
Objective 5.A	Address the risks posed by the potential failure of High Hazard Potential Dams within the county.	Continued to 2026 HMP.

Mitigation actions have been carried over and developed for the county as well as for each participating jurisdiction. While some actions may be more general in nature and could apply to more than one jurisdiction, most actions are specific to individual jurisdictions. The mitigation actions that were developed were based on the following: issues identified in the hazard identification and risk assessment, gaps identified in the mitigation capability analysis, input from the HMPT, and feedback from the Annual Plan Review Meeting held November 7, 2025. These mitigation actions may be implemented through a variety of local tools such as changes in ordinances and policies, inclusion into capital improvements budgets, and grant funding.

County and municipal actions in the 2021 Plan were distributed for the November 7 meeting for review and update. Each action has been assigned one of the following categories:

- **“Completed”** – Actions that were completed since the adoption of the 2021 Plan.
- **“Cancelled”** – Actions that were terminated.
- **“Deferred”** – Actions that had not been initiated since the adoption of the 2021 Plan.
- **“On-Going”** – Actions that are performed on a regular and continuous basis by the department.

The majority of existing mitigation actions have been carried over into the 2026 Hazard Mitigation Plan Update as they are continuous actions or actions that were not completed. A list of these actions as well as their status is included in Table 6.1-2. Actions were evaluated by the HMPT and municipal officials with the intent of producing a usable mitigation action plan in 2026 with actions and projects that could be completed over the next five years. **Appendix C** contains notes from the Mitigation Action Workshop.

Table 6.1-2 Status of 2021 Mitigation Actions

Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
All Municipalities that Participate in the NFIP	Flood, Hurricane, Tropical Storm, Nor'easter	Proceed with grant applications to suitably protect repetitive-loss properties 1% annual chance floodplain (for owners interested in FEMA mitigation funding).			X 1	X
Bensalem Township, Bristol Borough, Bristol Township, Doylestown Borough, Lower Makefield Township, Lower Southampton Township, Milford Township, Morrisville Borough, New Britain Borough, Northampton Township, Quakertown Borough, Riegelsville Borough, Sellersville Borough, Tinicum Township, West Rockhill Township	Dam Failure, Flood, Hurricane, Tropical Storm, Nor'easter, Structure Collapse	Continue identifying protection measures to operate critical facilities. Proceed with grant applications to suitably protect and continue operations of critical facilities in the 1% annual chance floodplain and at risk to utilities interruption from flooding and other hazards.				X
East Rockhill Township, Morrisville Borough, Upper Southampton Township, Yardley Borough	Dam Failure, Flood, Hurricane, Tropical Storm, Nor'easter	Continue identifying protection measures to operate businesses and protect residences. Proceed with grant applications for infrastructure that protects community from 1% annual chance floodplain.				X
All Municipalities	Flood, Hurricane, Tropical Storm, Nor'easter	Evaluate, implement, and perform mitigation projects identified in this and other planning mechanisms, including acquisition, elevation, mitigation reconstruction, foundation and building stabilization, securing access to generator power and other mitigation methods.	X 2			X
Haycock Township	Flood, Transportation Incidents	Township will replace 5 existing culverts on Top Rock Trail to mitigate flooding impacts of existing substandard drainage conditions in this area of the Township. This is part of an on-going effort to improve roadside drainage throughout the Township.				X
Trumbauersville Borough	Flood	Clean out all street drains, repair and/or replace culverts and drain grates.				X
Springfield Township	Flood, Transportation Incidents	Install storm sewer along a section of Peppermint Road to address an ongoing flooding issue that impacts neighboring downstream properties.				X
Upper Makefield Township	Flood	Elevate existing homes in the floodplain to limit damage during future flood events				X
West Rockhill Township	Flood	Repair culvert and swales on Lonely Road.				X
Nockamixon Township	Flood	Replace culvert on Tabor Road				X
Trumbauersville Borough	Flood	Repair/improve Modla/Park drainage swale.				X
Yardley Borough	Flood	Improving stormwater management in floodplain by jet cleaning storm drains and installing backflow preventers. Secondly, Yardley Borough				X

Table 6.1-2 Status of 2021 Mitigation Actions

Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
		will pursue the installation of additional storm drains and pipes to an area without.				
Yardley Borough	Flood	Continue elevating flood prone structures.				X
Yardley Borough	Flood	Increasing open space cache in floodplain.				X
Bedminster Township, Haycock Township, Hulmeville Borough, Lower Makefield Township, New Britain Borough, New Britain Township, New Hope Borough, Newtown Borough, Newtown Township, Quakertown Borough, Sellersville Borough, Silverdale Borough, Tinicum Township, Trumbauersville Borough, Tullytown Borough, Warrington Township, West Rockhill Township	Flood, Hurricane, Tropical Storm, Nor'easter	Work with township/borough officials to increase awareness of model floodplain ordinance and with property owners, including informational mailings to property owners in the 1% annual chance floodplain, and sponsoring a series of workshops about costs and benefits of: Acquiring and minimizing the cost of flood insurance coverage, and Property acquisition, relocation, elevation, dry floodproofing, and wet floodproofing.				X
Chalfont Borough, Lower Makefield Township, Newtown Township, Tinicum Township, Yardley Borough	Flood, Hurricane, Tropical Storm, Nor'easter	Evaluate and/or pursue Community Rating System (CRS) participation for insurance premium reduction (and flood damage reduction).	X 3			X
East Rockhill Township, New Britain Township, Nockamixon Township, Plumstead Township, Upper Southampton Township	Flood, Hurricane, Tropical Storm, Nor'easter	Obtain information for structures in the areas with the highest relative vulnerability to determine the best property protection methods. Information to be obtained includes: Lowest-floor elevation, Number of stories, Presence of a basement, and Market and/or replacement value.	X 4			X
All Municipalities that Participate in the NFIP	Flood, Hurricane, Tropical Storm, Nor'easter	Obtain information for all remaining structures in the 1% annual chance floodplain to determine the best property protection methods to promote with individual property owners. Techniques for gathering information over time should include developing and implementing a program for integrated information "capture" at key points in normal township administrative procedures, including applications for building permits at township/borough offices.	X 5			X
Tinicum Township	Flood	Provide a comprehensive update to the database that records floodplain properties and elevation certificates.				X
Yardley Borough	Flood	Pre-populating FEMA's Substantial Damage Estimator Tool.				X
Sellersville Borough, Solebury Township, Tinicum Township, West Rockhill Township	Flood, Hurricane, Tropical Storm, Nor'easter, Environmental Hazards, Urban Fire and Explosion	Identify all storage of hazardous materials in floodplains (including non-addressable structures, such as propane tanks).				X

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Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
West Rockhill Township	Flood, Hurricane, Tropical Storm, Nor'easter, Environmental Hazards, Urban Fire and Explosion	Evaluate alternative methods to minimize risk from existing storage areas.				X
West Rockhill Township	Flood, Hurricane, Tropical Storm, Nor'easter, Environmental Hazards, Urban Fire and Explosion	Assess means to prevent future storage in floodplain.				X
Doylestown Borough, West Rockhill Township	Dam Failure Drought, Extreme Temperature, Flood, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Lightning Strike, Structure Collapse, Tornado, Wind Storm, Utility Interruption, Winter Storm	Identify critical facilities with the highest vulnerability to the effects of power outage (i.e., hospitals, nursing homes, fire, police, rescue, and emergency management).				X
Doylestown Borough, West Rockhill Township	Dam Failure Drought, Extreme Temperature, Flood, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Lightning Strike, Structure Collapse, Tornado, Wind Storm, Utility Interruption, Winter Storm	Develop action plan for reducing potential damage and loss of function at identified critical facilities and infrastructure.				X
Doylestown Borough	Urban Fire and Explosion	Add additional water main on North Main Street to provide additional water service for residents and especially for fire fighting activity.				X
Plumstead Township	Utility Interruption	Complete interconnection of an existing public water system with facilities owned by North Wales Water Authority to ensure redundancy of supply in the Township's water system				X
East Rockhill Township	Utility Interruption	Replace aging sewage pump station to reduce outages and prevent storm damage.				X
West Rockhill Township	Dam Failure, Extreme Temperature, Flood, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Lightning Strike, Tornado, Wind Storm, Utility Interruption, Winter Storm	Conduct qualitative evaluation process for managing stranded rural residents and travelers (e.g., temporary shelters).				X
Solebury Township, Trumbauersville Borough, West Rockhill Township	Dam Failure, Extreme Temperature, Flood, Hailstorm,	If warranted, implement additional storm shelters and warning systems near vulnerable communities, including: Identify structures				X

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Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
	Hurricane, Tropical Storm, Nor'easter, Lightning Strike, Tornado, Wind Storm, Utility Interruption, Winter Storm	that can be used as tornado safe rooms (some may require structure modifications), or NOAA weather radios for vulnerable populace.				
Tinicum Township	Dam Failure, Earthquake, Environmental Hazards, Extreme Temperature, Flood, Flash Flood, Ice Jam, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Landslide, Lightning Strike, Pandemic, Radon, Structure Collapse, Subsidence, Sinkhole, Terrorism, Tornado, Wind Storm, Urban Fire and Explosion, Utility Interruption, Wildfire, Winter Storm	Utilize available county GIS Resources for municipal hazard related planning and outreach.				X
Bucks County	All Hazards	Review and update countywide datasets and coordinate with municipalities during this update. Identify method for distributing updated data.				X
Bensalem Township, Bristol Borough, Bristol Township, Langhorne Borough, Langhorne Manor Borough, Lower Southampton Township, Middletown Township, Milford Township, Pennel Borough, Solebury Township, Yardley Borough	Structure Collapse, Transportation Incidents	Review prevalence of transportation accidents and known infrastructure deficiencies and advocate for projects and funding that will increase safety.	X 4			X
Hilltown Township	Structure Collapse, Transportation Incidents	Replace the deck of an existing bridge on Schultz Road that is structurally deficient to ensure that the transportation system of the Township is not adversely impacted if the bridge must be closed to traffic.				X
Richland Township	Transportation Incidents	Implement signal improvements at intersections that frequently experience traffic accidents.				X
Silverdale Borough	Transportation Incidents	Traffic calming on Main Street and Barringer Avenue.				X
Tinicum Township	Transportation Incidents	Bridge replacement or rehab on Headquarters Rd spanning the Tinicum Creek due to structural failure.				X

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Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
New Britain Township	All Hazards	Distribute and promote the inclusion of vulnerability analysis information as part of periodic plan review and revisions at the township/borough level.				X
Doylestown Borough, East Rockhill Township, New Britain Township, Plumstead Township, Silverdale Borough	Winter Storm	Integrate evaluation of snow-removal and emergency access logistics with new development planning.				X
Buckingham Township	All Hazards	Update local zoning ordinances				X
Springfield Township, Riegelsville Borough	Subsidence, Gas and Liquid Pipelines	Consider extra permitting requirements for mines and pipelines in areas with carbonate rock.				X
Haycock Township, New Britain Township, Plumstead Township, Silverdale Borough, Springfield Township, Upper Southampton Township	Dam Failure, Earthquake, Environmental Hazards, Extreme Temperature, Flood, Flash Flood, Ice Jam, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Landslide, Lightning Strike, Structure Collapse, Subsidence, Sinkhole, Tornado, Wind Storm, Urban Fire and Explosion, Utility Interruption, Wildfire, Winter Storm	Evaluate adequacy of township/borough building code implementation.				X
Haycock Township, New Britain Township, Silverdale Borough, Upper Southampton Township	Hurricane, Tropical Storm, Nor'easter, Tornado, Wind Storm, Winter Storm	Encourage increasing design wind and/or snow load for future development.				X
Chalfont Borough, Doylestown Borough, East Rockhill Township, New Britain Township, Plumstead Township, Silverdale Borough, Upper Southampton Township, West Rockhill Township	Dam Failure, Earthquake, Environmental Hazards, Extreme Temperature, Flood, Flash Flood, Ice Jam, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Landslide, Lightning Strike, Structure Collapse, Subsidence, Sinkhole, Tornado, Wind Storm, Urban Fire and Explosion, Utility Interruption, Wildfire, Winter Storm	Train the municipal building inspectors to consistently enforce the building code.				X

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Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
Bucks County	All Hazards	Reach out to municipalities annually and ask them to advise on any changes in their local ordinances.				X
Involved with Acquisition, Elevation, Ordinances and Stormwater Management: Bristol Township, Bensalem Township, Buckingham Township, Hulmeville Borough, Middletown Township, Newtown Township, Lower Southampton Township, Northampton Township, Warwick Township, Wrightstown Township Involved with Ordinances and Stormwater Management: Buckingham Township, Doylestown Borough, New Britain Borough, New Britain Township, Warminster Township, Warrington Township, Warwick Township"	Flood, Hurricane, Tropical Storm, Nor'easter	Continue non-structural measures for mitigation of flood hazard per the December 2001 "Neshaminy Creek Supplemental Watershed Work Plan No. 5." The plan includes the following major components: Flood warning system, Voluntary property acquisition, Voluntary building elevation and floodproofing, and Continuation/ enhancement of floodplain ordinances, flood insurance, and stormwater management.				X
Doylestown Township, Plumstead Township	All Hazards	Develop Disaster Recovery plan that examines impact and plans outreach and continuity of operations for disaster events. Implements steps from planning process that could mitigate impacts and speed recovery for on residents, businesses, and government.				X
Doylestown Borough, Richlandtown Borough, Tullytown Borough	Environmental Hazards	Continue coordination and planning to mitigate, prepare, and respond to local hazardous materials facilities.				X
Delaware Valley College, Holy Family University - Bucks County, Philadelphia Biblical University, Doylestown Township, Langhorne Borough, New Britain Borough, Newtown Township	All Hazards	Continue coordination and planning with local colleges and universities to be partners to mitigate, prepare, and respond to hazards.				X
Bensalem Township, Bristol Borough, Doylestown Township, Haycock Township, Richland Township, Solebury Township, Springfield Township, Tinicum Township, Upper Makefield Township, and Yardley Borough	All Hazards	Inventory the historic properties vulnerable to the identified hazards, assess vulnerability of these assets, and establish preservation priorities by determining which assets are most valuable to the community.				X
Tinicum Township	Dam Failure	Work with Township Public Works, Police, and local Fire Police to evaluate and develop evacuation plan/routes.				X
New Britain Township, Silverdale Borough, Warrington Township, West Rockhill Township	All Hazards	Identify and publicize success stories from Bucks County and from other locations that provide a good example for Bucks County as part of an overall public education program.				X

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Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
East Rockhill Township, Hulmeville Borough, Langhorne Borough, Lower Southampton Township, New Britain Borough, New Britain Township, New Hope Borough, Plumstead Township, Richlandtown Borough, Sellersville Borough, Silverdale Borough, Tinicum Township, Trumbauersville Borough, Warrington Township	All Hazards	Increase awareness by residents of actions to take before, during and after an emergency. Methods include public outreach and education by website, mailings, workshops, media coverage, newsletter, Twitter and Facebook.				X
New Hope Borough, Tinicum Township	Flood, Hurricane, Tropical Storm, Nor'easter	Secure flood specific signage that warns travelers that barricades are present to prevent them from traveling into floodwater.	X 6			X
Bedminster Township, Bristol Township, Durham Township, East Rockhill Township, Falls Township, Haycock Township, Hilltown Township, Milford Township, Nockamixon Township, Plumstead Township, Richland Township, Solebury Township, Springfield Township, Tinicum Township, West Rockhill Township	Wildfire	Evaluate and consider implementing activities to secure "Firewise" designation.				X
Solebury Township, Tinicum Township, Trumbauersville Borough, West Rockhill Township	Dam Failure, Extreme Temperature, Flood, Hailstorm, Hurricane, Tropical Storm, Nor'easter, Lightning Strike, Tornado, Wind Storm, Utility Interruption, Winter Storm	Maintain information and continue outreach to residents with the highest relative vulnerability to the effects of hazards.				X
Bensalem Township, Bristol Borough, Doylestown Township, Haycock Township, Richland Township, Solebury Township, Springfield Township, Tinicum Township, Upper Makefield Township, and Yardley Borough	All Hazards	Engage the community on the vulnerability of the historic properties to hazards in the community and identify community members interested in becoming core planning team members to continue the historic property hazard mitigation planning process.				X
Chalfont Borough	Radon Exposure	Provide staff and public education on radon dangers and mitigation requirements.				X
Bucks County, All Municipalities	All Hazards	Convene regular meetings of a restructured HMPT to discuss issues and progress related to the implementation of the plan.				X
Bensalem Township, Bucks County	All Hazards	Link available technical assistance top communities that have residents interested in HMA grants yet need additional capacity to pursue complicated application and management process.				X

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Community	Addressed Hazard(S)	Mitigation Action	Status			
			Completed	Cancelled	Deferred	Ongoing
Bucks County	Transportation Incidents	Train emergency personnel in a basic understanding of railroads and their dangers.				X
New Britain Township, Silverdale Borough, Upper Southampton Township	All Hazards	Renew and expand commitments to hazard mitigation planning among partner organizations.				X
Hilltown Township	Pandemic	Evaluate effectiveness of the pandemic protocol implementation and restocking of pandemic response kits.				X
Bucks County, All Municipalities	All Hazards	Work to provide access to the internet across the County and make sure there are enough cell towers to service the entire County.	X ³			X
All Municipalities	Pandemic	Create telework plans.	X ³			X
Bedminster Township	Pandemic	Implement increased communications and accessibility for residents to the local government.				X
East Rockhill Township, Yardley Borough	Flood, Hurricane, Tropical Storm, Nor'easter	Evaluate and implement projects to protect and improve natural environment along waterways with projects including preservation, conversation easements, and bank restoration.				X
East Rockhill Township, Lower Southampton Riegelsville	Flood, Hurricane, Tropical Storm, Nor'easter	Evaluate and implement projects to manage stormwater effectively.				X
Doylestown Borough, Penndel Borough, Tinicum Township, Warrington Township, Yardley Borough	Flood, Hurricane, Tropical Storm, Nor'easter	Build on existing Stormwater Management Planning and encourage implantation of small stormwater mitigation projects on private property (i.e. rain gardens, rain barrels, natural basins).				X
Upper Makefield Township	Flood	Restore native plants and wetlands to the watershed to address flooding issues.				X

¹Buckingham Township, Warwick Township²Buckingham Township, Perkasio Borough³Doylestown Township, Warwick Township⁴Lower Makefield Township⁵Warwick Township⁶Yardley Borough

6.1.3 Mitigation Successes

A great deal of mitigation progress has been made on hazard mitigation projects and actions in the last five years. Details on numerous actions marked as “Completed” since the 2021 plan update are summarized below:

Structure and Infrastructure

- Perkasie Borough has worked of home and business owners located in the floodplain who were interested in selling their properties to FEMA through their buy-back program. No properties have been bought out yet, but the coordination and collaboration has allowed those at risk to weigh their options.
- Doylestown Township reviews all development applications for flood risk using GIS.
- Lower Makefield Township has obtained information for structures with the highest relative vulnerability to determine the best property protection methods.
- Warminster Municipal Authority has completed the Tennyson Basin Upgrade, a one-year, \$2 million project which doubled the size of an existing stormwater basin to accommodate a 100-year storm.
- Warminster Municipal Authority completed eight major pipe or culvert replacement projects, funded by FEMA from Hurricane Ida impacts; projects which upsized pipes to meet today’s codes and standards. Alongside these larger projects, the Authority completed numerous smaller runs of pipe replacements, inlet cleaning, pipe cleaning, and inlet repairs/replacement projects.
- Wrightstown Township has completed multiple flood-impacted projects over the period since last HMP update: Williams Avenue (May 2025) which fixed a drainage ditch, improving flooding outcomes for neighboring properties, Brownsburg Road (2025) which helped to alleviate runoff which previously crossed the roadway, Cedar Lane (Fall 2025) which stabilized the streambank along Cedar Lane and provided flood remediation, Penns Park Road (Fall 2025) which added driveway pipes and dug out sides of Penns Park Road, Thompson Mill Road Culvert (December 2025) which cleared out the area of a collapsed drainage pip and added stone to allow for water flow.
- Perkasie Borough’s Lenape Park Pedestrian Bridge project (Spring 2024) consisted of the replacement of an existing pedestrian bridge, including the widening of a portion of a tributary to the East Brank Perkiomen Creek.
- Perkasie Borough’s Arch Street Water Quality Device and the W. Spruce Street Water Quality Device work to address the removal of floatables and sediment from the Borough’s storm sewer system to reduce the amount of materials entering a tributary to the East Branch Perkiomen Creek.
- Perkasie Borough’s N. 5th Street Storm Sewer Installation Project (Spring 2025) consisted of the installation of a storm sewer system to eliminate a ponding condition at the intersection of N. 5th Street and Vine Streets.
- Doylestown Township’s ongoing Chapman Road Bridge repair (2024-) will help mitigate hazard by maintaining structural integrity and waterway flow capacity, reducing flooding potential, erosion, and the risk of infrastructure failure during severe storm events.

Local Plans and Regulations

- Perkasio Borough completed a flood study to evaluate the condition of the waterways and identify mitigation strategies.
- Perkasio Borough is participating in the Perkiomen Watershed study of the entire waterway, and is supporting mitigation efforts there.
- Doylestown Township has achieved CRS participation. They are Class 3.
- Doylestown Township has updated their emergency management plan to list agencies that can provide support post-disaster.
- Warwick Township has achieved CRS participation and updated their stormwater ordinance (Sept. 2022).
- Warminster Municipal Authority implemented a stormwater management fee in January 2022. This fee has been crucial for establishing a capital plan for stormwater upgrades.
- Perkasio Borough's S. 7th Street Culvert Analysis (Fall 2022) studied a tributary to the East Branch Perkiomen Creek, which included the entire culvert along with the downstream endwall structure. The Borough also conducted a stream evaluation of the entire portion of the East Branch Perkiomen Creek within the Borough limits, including the Pleasant Spring Creek. The goal of the investigation was to identify potential problems of streambank erosion and potential areas for flood mitigation structures or improvements. Through this, several areas that would benefit from stabilization efforts and several more where some measure of flood relief would be feasible were identified.
- Nockamixon Township both started and completed a project to build a culvert along Talbot Road in 2021.

Natural Systems Protection

- Warminster Municipal Authority completed streambank restoration projects along Centennial Road and Manor Drive, funded by FEMA.
- Perkasio Borough has begun the Pleasant Spring Creek Streambank Stabilization Project which started in December 2025 and continues to date. The project aims to address the erosion of the streambank.
- Doylestown Township has completed (2024) the Central Park Streambank Stabilization Project, a \$1.6 million initiative that stabilized nearly 2,000 feet of streambank from Turk Road to Central Park, improving long term stability and water quality while fulfilling the Township's MS4 permit reporting and compliance obligations. The project prevented further erosion and enhanced habitat for local wildlife.
- Doylestown Township's Naturalized Basin and Open Space Program has naturalized three stormwater basins in the township. This work included removing the concrete bottoms to increase infiltration, improve stormwater pollutant reduction, enhance groundwater recharge, and reduce local flooding and erosion.
- Pennel Borough has received a Growing Greener Watershed Protection Grant in the amount of \$105,000, funding which will support a Neshaminy Creek Streambank Restoration Project in conjunction with Hulmeville Borough and Middletown Township.

Education and Awareness

- Bucks County held annual reviews with local officials and stakeholders to continue ongoing efforts to work towards achieving the county's hazard mitigation planning goals.

- The Bucks County Planning Commission created a Hazard Mitigation Project Tracker, which is a tool to track hazard mitigation projects and funding throughout the county.
- Warminster Municipal Authority leads stream cleaning events, tree planting events, and education talks at Warminster EAC meetings.
- Council Rock School District continues to conduct emergency response drills for all hazards at all district schools. They continue to ensure that schools designated as shelters are functional and regularly test generators.
- Doylestown Township has updated its website to provide residents with clear, easy-to-find information on stormwater management, MS4 requirements, and related public education materials.
- Yardley Borough has secured flood specific signage that warns travelers that barricades are present to prevent them from traveling into floodwater.
- Perkasié Borough has led Environmental Day at the Farmers Market (September 2025) which included a booth alongside the Bucks County Conservation District to educate the public on stormwater management and erosion control. The borough's Earth Day Celebration (April 2022 and April 2023) provided a booth to educate the public on stormwater management and erosion control.

6.2 Goals and Objectives

Based on results of the review of the 2021 HMP mitigation goals and objectives established, several goals and objectives were improved in 2026. Table 6.2-1 lists the mitigation goals and objectives established for the 2026 plan.

Table 6.2-1 Bucks County 2026 HMP Goals and Objectives

Goal/Objective #	Goal/Objective
GOAL 1	Reduce potential injury, death, and damage due to natural and human-made hazards.
Objective 1.1	Implement mitigation activities to reduce risk to existing properties, community lifelines, infrastructure, and other public facilities.
Objective 1.2	Leverage data and science to consider future conditions in land use planning, infrastructure management, and mitigation projects.
Objective 1.3	Prioritize high-risk assets such as transportation systems, high-hazard dams, and areas vulnerable to hazardous material releases or repetitive flooding.
Objective 1.4	Evaluate and prioritize communities that require warning systems and storm shelters.
GOAL 2	Promote hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population.
Objective 2.1	Increase awareness of hazards and opportunities for mitigation through public education campaigns.
Objective 2.2	Increase public outreach/education for property owners and tenants regarding hazard risks and potential mitigation opportunities.
Objective 2.3	Partner with leaders in the business community to increase disaster awareness and resilience.
Objective 2.4	Encourage and support employers, employees, and residents to increase remote work capabilities.
Objective 2.5	Partner with other agencies and organizations to understand and address socially vulnerable and underserved communities within the county.
GOAL 3	Enhance county mitigation program and support efforts to increase municipal and authority mitigation capabilities and planning.
Objective 3.1	Leverage and expand GIS data and capabilities for improved hazard planning and outreach.
Objective 3.2	Promote partnerships between the municipalities and the County to continue to develop a County-wide approach to identifying and implementing mitigation actions.
Objective 3.3	Provide adequate and consistent enforcement of ordinances and codes within and between jurisdictions.
Objective 3.4	Integrate hazard mitigation planning and risk considerations into other long-term and county planning initiatives such as the county's comprehensive plan, sustainability plan, and Act 167 Stormwater Management Plan.
Objective 3.5	Work across state, federal, and local agencies to identify and pursue mitigation funding opportunities.
GOAL 4	Protect natural resources within hazard areas and use them to reduce risk and losses.
Objective 4.1	Identify natural resource areas providing risk reduction benefits that remain vulnerable to future development.
Objective 4.2	Partner with organizations to restore natural resource areas that could provide increased risk reduction benefits.
Objective 4.3	Identify opportunities to use green infrastructure and nature-based solutions for stormwater management and flood attenuation. Create buffers between flood prone areas and development.
GOAL 5	Protect people and assets from the potential impacts of high hazard potential dams.
Objective 5.1	Coordinate with High Hazard Potential Dam owners and affected officials on dam rehabilitation and funding.
Objective 5.2	Address the risks posed by the potential failure of High Hazard Potential Dams within the county.

6.3 Identification and Analysis of Mitigation Techniques

The mitigation strategy in the updated Hazard Vulnerability Assessment and Mitigation Plan Update should include analysis of a comprehensive range of specific techniques or actions. FEMA, through Local Mitigation Handbook, and PEMA, through the 2025 SOG, identify four categories of hazard mitigation techniques.

- **Local plans and regulations:** Government authorities, policies, or codes that influence the way land and buildings are developed and built. Examples include, but are not limited to, comprehensive plans, subdivision regulations, building codes and enforcement, and NFIP and CRS.
- **Structure and infrastructure:** Modifying existing structures and infrastructure or constructing new structures to reduce hazard vulnerability. Examples include, but are not limited to, acquisition and elevation of structures in flood prone areas, utility undergrounding, structural retrofits, floodwalls and retaining walls, detention and retention structures, and culverts.
- **Natural systems protection:** Actions that minimize damage and losses and preserve or restore the functions of natural systems. Examples include, but are not limited to, sediment and erosion control, stream corridor restoration, forest management, conservation easements, and wetland restoration and preservation.
- **Education and awareness:** Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate the hazards and may also include participation in national programs. Examples include, but are not limited to, radio or television spots, websites with maps and information, provide information and training, NFIP outreach, StormReady, and Firewise Communities.

The HMPT reviewed the four types of mitigation techniques and examples of actions at the Risk Assessment and Mitigation Solutions Workshop. Table 6.3-1 provides a matrix identifying the mitigation techniques used for each hazard in the county. The specific actions associated with these techniques are included in Table 6.-1.

Table 6.3-1 Mitigation Techniques for All Hazards in Bucks County.

Hazard	Mitigation Technique			
	Local Plans and Regulations	Education and Awareness Programs	Natural Systems Protection	Structural and Infrastructure Projects
Flood, Flash Flood, Ice Jam	X	X	X	X
Winter Storm	X	X		X
Extreme Temperatures	X	X		X
Hurricane, Tropical Storm, Nor'easter	X	X	X	X
Environmental Hazards – Hazardous Materials Release	X	X		X
Wildfire	X	X		X
Pandemic And Infectious Disease	X	X		X
Utility Interruption	X	X		X
Transportation Incidents	X	X		X
Environmental Hazards – Gas and Liquid Pipelines	X	X		X
Drought	X	X		X
Tornado, Windstorm	X	X		X
Dam Failure	X	X		X
Urban Fire and Explosion	X	X		X

Hazard	Mitigation Technique			
	Local Plans and Regulations	Education and Awareness Programs	Natural Systems Protection	Structural and Infrastructure Projects
Terrorism	X	X		X
Lightning Strike	X	X		X
Landslide	X	X		X
Structural Collapse	X	X		X
Cyber Terrorism	X	X		X
Earthquake	X	X		X
Radon Exposure	X	X		X
Subsidence, Sinkholes	X	X		X
Hailstorm	X	X		X

Table 6.3-2 provides a matrix identifying which municipalities have mitigation actions for each of hazards identified in the risk assessment. Each municipality has one action for all high-risk hazards, and for all medium and low risk hazards that they have identified as impacting them. All municipalities and participating special districts have ‘all hazards’ coverage through ‘all hazards’ actions including public education and awareness strategies. Table 6.3-2 focuses on specific action identification beyond ‘all hazards’ actions. Determination of hazards each participant has identified as affecting their communities or facilities is identified in table 4.4-3. Table 4.4-3 shows the different municipalities in Bucks County and whether their risk is greater than (>), less than (<), or equal to (=) the risk factor assigned to the county as a whole. Each municipality has a mitigation action for any hazards identified as greater than or equal to the risk factor of the county. All municipalities have an action for high-risk hazards. The specific actions associated with these techniques are included in Table 6.4-1 in the next section.

Table 6.3-2 Mitigation Actions Per Specified Hazard for Each Municipality

Municipality	Flood, Flash Flood, Ice Jam	Winter Storm	Extreme Temperatures	Hurricane, Tropical Storm, Nor'easter	Environmental Hazards – Hazardous Materials Release	Wildfire	Pandemic and Infectious Disease	Utility Interruption	Transportation Incidents	Gas And Liquid Pipelines	Drought	Tornado, Windstorm	Dam Failure	Urban Fire and Explosion	Terrorism	Lightning Strike	Landslide	Structural Collapse	Cyber Terrorism	Earthquake	Radon Exposure	Subsidence, Sinkholes	Hailstorm
Bedminster Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
Bensalem Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X
Bridgeton Township	X	X	X	X	X	X	X	X	X		X	X			X	X	X	X	X	X			X
Bristol Borough	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X
Bristol Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X
Buckingham Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chalfont Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Doylestown Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Doylestown Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Dublin Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X		X
Durham Township	X	X	X	X	X	X	X	X	X		X	X			X	X	X	X	X	X	X	X	X
East Rockhill Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Falls Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Haycock Township	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X
Hilltown Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Hulmeville Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Ivyland Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X		X
Langhorne Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X		X
Langhorne Manor Borough	X	X	X	X	X	X	X	X	X			X	X	X	X	X		X	X	X	X		X
Lower Makefield Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Lower Southampton Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Middletown Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Milford Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Morrisville Borough	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X	X		X
New Britain Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
New Britain Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
New Hope Borough	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X

Table 6.3-2 Mitigation Actions Per Specified Hazard for Each Municipality

Municipality	Flood, Flash Flood, Ice Jam	Winter Storm	Extreme Temperatures	Hurricane, Tropical Storm, Nor'easter	Environmental Hazards – Hazardous Materials Release	Wildfire	Pandemic and Infectious Disease	Utility Interruption	Transportation Incidents	Gas And Liquid Pipelines	Drought	Tornado, Windstorm	Dam Failure	Urban Fire and Explosion	Terrorism	Lightning Strike	Landslide	Structural Collapse	Cyber Terrorism	Earthquake	Radon Exposure	Subsidence, Sinkholes	Hailstorm
Newtown Borough	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X		X
Newtown Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Nockamixon Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Northampton Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Penndel Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Perkasie Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Plumstead Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Quakertown Borough	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X		X
Richland Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Riegelsville Borough	X	X	X	X	X	X	X	X	X			X		X	X	X	X	X	X	X	X	X	X
Sellersville Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Silverdale Borough	X	X	X	X	X	X	X	X	X		X	X		X	X	X		X	X	X	X		X
Solebury Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Springfield Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Telford Borough	X	X	X	X	X	X	X	X	X			X		X	X	X		X	X	X	X		X
Tinicum Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Trumbauersville Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X		X
Tullytown Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Upper Makefield Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Upper Southampton Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Warminster Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Warrington Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Warwick Township	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
West Rockhill Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Wrightstown Township	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X
Yardley Borough	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X

6.4 Mitigation Action Plan

The final list of mitigation actions is contained in Table 6.4-1. This table provides an overview of the strategy that will be utilized in order to implement each of the proposed mitigation actions. For each action listed in Table 6.4-1, the associated strategy identifies the agency or job title that will be responsible for initiating the work and potential sources of funding for the work. Each strategy also indicates a timeframe for when the action will happen.

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
GOAL 1 – Reduce potential injury, death, and damage due to natural and human-made hazards.							
1.1	Proceed with grant applications to suitably protect repetitive-loss properties 1% annual chance floodplain (for owners interested in FEMA mitigation funding).	All Municipalities	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities, Bucks County Planning Commission	Within 2 years	Staff time; PEMA Technical Support
1.2	Continue identifying protection measures to operate critical facilities. Proceed with grant applications to suitably protect and continue operations of critical facilities in the 1% annual chance floodplain and at risk to utilities interruption from flooding and other hazards.	Bensalem Township, Bristol Borough, Bristol Township, Doylestown Borough, Lower Makefield Township, Lower Southampton Township, Milford Township, Morrisville Borough, New Britain Borough, Northampton Township, Quakertown Borough, Riegelsville Borough, Sellersville Borough, Tinicum Township, West Rockhill Township	Structure and Infrastructure	Dam Failure; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Structural Collapse	Municipalities	Within 2 years	Staff time; PEMA Technical Support; Non-Disaster Funding
1.3	Continue identifying protection measures to operate businesses and protect residences. Proceed with grant applications for infrastructure that protects community from 1% annual chance floodplain.	East Rockhill Township, Morrisville Borough, Upper Southampton Township, Yardley Borough	Structure and Infrastructure	Dam Failure; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities	Within 2 years	Staff time; PEMA Technical Support; Non-Disaster Funding
1.4	Evaluate, implement, and perform mitigation projects identified in this and other planning mechanisms, including acquisition, elevation, mitigation reconstruction, foundation and building	All Municipalities (minus Buckingham Township and Perkasio Borough who completed this action as of the 2026 update)	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities, Bucks County Planning Commission	Continuously for next 5 years.	Non-Disaster Funding; USDA-NRCS

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	stabilization, securing access to generator power and other mitigation methods.						
1.5	Township will replace 5 existing culverts on Top Rock Trail to mitigate flooding impacts of existing substandard drainage conditions in this area of the Township. This is part of an ongoing effort to improve roadside drainage throughout the Township.	Haycock Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Transportation Incidents	Public Works Department	years	General Township Budget - Estimated \$10k
1.6	Clean out all street drains, repair and/or replace culverts and drain grates.	Trumbauersville Borough	Natural Systems Protection	Flood, Flash Flood, Ice Jam	Borough President and Secretary	0-1 years	Borough funds - Estimated \$15K
1.7	Install storm sewer along a section of Peppermint Road to address an ongoing flooding issue that impacts neighboring downstream properties.	Springfield Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Transportation Incidents	Public Works Department	2-3 years	Public Works Budget - Estimated \$100K
1.8	Elevate existing homes in the floodplain to limit damage during future flood events	Upper Makefield Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Township Board of Supervisors and Township Staff	2-3 years	FMA grants, BRIC, local match - \$150K per home
1.9	Repair culvert and swales on Lonely Road.	West Rockhill Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Township Engineer	0-1 Years	Township General Fund, PA Liquid Fuels - Estimated \$50K
1.10	Replace culvert on Tabor Road	Nockamixon Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Township Manager	0-1 Years	Township General Fund, Estimated \$50K
1.11	Repair/improve Modla/Park drainage swale.	Trumbauersville Borough	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Borough Engineer	2-3 Years	Borough General Fund - Estimated \$50K
1.12	Improving stormwater management in floodplain by jet	Yardley Borough	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Borough Council, Borough Engineer	2-3 Years	FMA, Borough General Fund

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	cleaning storm drains and installing backflow preventers. Secondly, Yardley Borough will pursue the installation of additional storm drains and pipes to an area without.						
1.13	Continue elevating flood prone structures.	Yardley Borough	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Borough Council	2-3 Years	Non-Disaster Funding
1.14	Evaluate and/or pursue Community Rating System (CRS) participation for insurance premium reduction (and flood damage reduction).	Chalfont Borough, Lower Makefield Township, Newtown Township, Tinicum Township, Yardley Borough	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities	Within 2 years	Staff time; FEMA Technical Support
1.15	Obtain information for structures in the areas with the highest relative vulnerability to determine the best property protection methods. Information to be obtained includes: Lowest-floor elevation, Number of stories, Presence of a basement, and Market and/or replacement value.	East Rockhill Township, New Britain Township, Nockamixon Township, Plumstead Township, Upper Southampton Township	Local Plans and Regulations; Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities	Within 5 years	Staff time; DCED and PEMA Technical Support
1.16	Obtain information for all remaining structures in the 1% annual chance floodplain to determine the best property protection methods to promote with individual property owners. Techniques for gathering information over time should include developing and implementing a program for integrated information "capture" at key points in normal township administrative procedures, including applications for building	All Municipalities	Local Plans and Regulations; Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities	Within 5 years	Staff time; DCED and PEMA Technical Support

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	permits at township/borough offices.						
1.17	Provide a comprehensive update to the database that records floodplain properties and elevation certificates.	Tinicum Township	Local Plans and Regulations; Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Township Manager & Administrative Services	2-3 years	Local General Tax - \$1.5K for database upgrades
1.18	Identify storage of hazardous materials in floodplains (including non-addressable structures, such as propane tanks) as reported.	Sellersville Borough, Solebury Township, Tinicum Township, West Rockhill Township	Local Plans and Regulations	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Hazardous Materials Release; Urban Fire and Explosion	Municipalities, Bucks County Emergency Management Agency	Within 3 years	Staff time
1.19	Evaluate alternative methods to minimize risk from existing storage areas.	West Rockhill Township	Local Plans and Regulations	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Hazardous Materials Release; Urban Fire and Explosion	Municipalities	Within 3 years	Staff time
1.20	Assess means to prevent future storage in floodplain.	West Rockhill Township	Local Plans and Regulations	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Hazardous Materials Release; Urban Fire and Explosion	Municipalities	Within 3 years	Staff time; DCED Technical Support for Model Ordinance that addresses hazardous materials in floodplain
1.21	Identify critical facilities with the highest vulnerability to the effects of power outage (i.e., hospitals, nursing homes, fire, police, rescue, and emergency management).	Doylestown Borough, West Rockhill Township	Education and Awareness	Dam Failure; Drought; Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Lightning Strike; Structure Collapse; Tornado, Wind	Municipalities, Bucks County Emergency Management Agency	Within 3 years	Staff Time; NOAA Storm Ready

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
				Storm; Utility Interruption; Winter Storm			
1.22	Develop action plan for reducing potential damage and loss of function at identified critical facilities and infrastructure.	Doylestown Borough, West Rockhill Township	Structure and Infrastructure; Education and Awareness	Dam Failure; Drought; Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Lightning Strike; Structural Collapse; Tornado, Wind Storm; Utility Interruption; Winter Storm	Municipalities, Bucks County Emergency Management Agency	Within 5 years	Staff Time; DHS; NOAA Storm Ready; Private Funding from Critical Facilities and Infrastructure
1.23	Add additional water main on North Main Street to provide additional water service for residents and especially for fire fighting activity.	Doylestown Borough	Structure and Infrastructure	Urban Fire and Explosion	Public Works Director/ Deputy Manager	years	DHS grants, local budget - Estimated \$400K
1.24	Complete interconnection of an existing public water system with facilities owned by North Wales Water Authority to ensure redundancy of supply in the Township's water system	Plumstead Township	Structure and Infrastructure	Utility Interruption	Water Department/Township Manager	2-3 years	Water Budget/General Fund Budget - Estimated \$1.5M
1.25	Replace aging sewage pump station to reduce outages and prevent storm damage.	East Rockhill Township, Warminster Municipal Authority	Structure and Infrastructure	Utility Interruption	Township Manager	Years	Township General Fund - Estimated \$1M
1.26	Conduct qualitative evaluation process for managing stranded rural residents and travelers (e.g., temporary shelters).	West Rockhill Township	Local Plans and Regulations	Dam Failure; Drought; Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Lightning Strike; Structure Collapse; Tornado, Wind Storm; Utility Interruption; Winter Storm	Municipalities, Bucks County	Within 5 years	Staff Time; DHS; NOAA Storm Ready
1.27	If warranted, implement additional storm shelters and warning systems near vulnerable	Solebury Township, Trumbauersville	Education and Awareness;	Dam Failure; Drought; Extreme Temperature; Flood, Flash Flood, Ice	Municipalities, Bucks County Emergency Management Agency	Within 5 years	Staff Time; DHS; NOAA Storm Ready

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
	communities, including: Identify structures that can be used as tornado safe rooms (some may require structure modifications), or NOAA weather radios for vulnerable populace.	Borough, West Rockhill Township	Local Plans and Regulations	Jam; Hurricane, Tropical Storm, Nor'easter; Lightning Strike; Structure Collapse; Tornado, Wind Storm; Utility Interruption; Winter Storm			
1.28	Review prevalence of transportation accidents and known infrastructure deficiencies and advocate for projects and funding that will increase safety.	Bensalem Township, Bristol Borough, Bristol Township, Langhorne Borough, Langhorne Manor Borough, Lower Southampton Township, Middletown Township, Milford Township, Penndel Borough, Solebury Township, Yardley Borough	Structure and Infrastructure	Structural Collapse; Transportation Incidents	Municipalities, Bucks County Planning Commission, Bucks County General Services Division	Within 5 years	PennDOT
1.29	Replace the deck of an existing bridge on Schultz Road that is structurally deficient to ensure that the transportation system of the Township is not adversely impacted if the bridge must be closed to traffic.	Hilltown Township	Structure and Infrastructure	Structural Collapse; Transportation Incidents	Township Public Works	0-1 years	Township Public Works Budget - Estimated \$250K
1.30	Implement signal improvements at intersections that frequently experience traffic accidents.	Richland Township	Structure and Infrastructure	Transportation Incidents	Municipality	Within 5 years	PennDOT
1.31	Traffic calming on Main Street and Barringer Avenue.	Silverdale Borough	Structure and Infrastructure	Transportation Incidents	Borough Engineer	2-3 Years	Borough General Fund, Grant - Estimated \$125K
1.32	Bridge replacement or rehab on Headquarters Rd spanning the	Tinicum Township	Structure and Infrastructure	Transportation Incidents	PennDOT	Within 5 years	PennDOT

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	Tinicum Creek due to structural failure.						
1.33	Inventory the historic properties vulnerable to the identified hazards, assess vulnerability of these assets, and establish preservation priorities by determining which assets are most valuable to the community.	Bensalem Township, Bristol Borough, Doylestown Township, Haycock Township, Richland Township, Solebury Township, Springfield Township, Tinicum Township, Upper Makefield Township, and Yardley Borough	Local Plans and Regulations	All Hazards	Municipalities	Continuously for next 5 years.	Staff time; PHMC
1.34	Evaluate and implement projects to manage stormwater effectively.	East Rockhill Township, Lower Southampton Riegelsville, Warminster Municipal Authority	Natural Systems Protection	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipal Environmental Advisory Councils, Watershed Associations, Private property owners	Continuously for next 5 years.	CIP, DEP
1.35	Routinely clean and repair stormwater drains.	Buckingham Township, Warrington Township, Wrightstown Township, Yardley Borough, Warminster Municipal Authority	Plans and Regulations	Flood, Flash Flood, Ice Jam	Public Works Department	Ongoing	Staff Time
1.36	Implement traffic calming measures at key community intersections.	All Municipalities	Structure and Infrastructure	Transportation Incidents	Local Emergency Services, Local Planning Agencies	Ongoing	Local Planning Funding, PennDOT
1.37	Partner with local emergency management, critical facilities (e.g., hospitals) and other organizations to explore opportunities with the StormReady program.	Doylestown Borough	Education and Awareness	Lightning Strike	Emergency Management	1 Year	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
1.38	Plan for and maintain adequate road and debris clearing capabilities	Doylestown Borough, Yardley Borough	Plans and Regulations	Winter Storm	Public Works Department	Ongoing	Staff Time
1.39	Replace the Weiss Road bridge.	Milford Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Transportation Incidents	Township	3-5 years	PennDOT Retro Reimbursement Fund
1.40	Repair two bridges at Allentown Road and Route 663.	Milford Township	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Transportation Incidents	Township	3-5 years	PennDOT
1.41	Install lightning and surge protection devices and methods, such as lightning rods and grounding, on communications infrastructure, critical electronic equipment, and other critical facilities.	Wrightstown Township	Structure and Infrastructure	Lightning Strike	Public Works Department	5 Years	Non-Disaster Funding
1.42	Conduct a verification study of FEMA's repetitive loss inventory and developing an associated tracking database to prioritize and share information.	Yardley Borough	Plans and Regulations	Flood, Flash Flood, Ice Jam	Planning and Development	1-2 Years	Staff Time
1.43	Identify structures at risk to collapse and create a strategy for mitigation.	All Municipalities	Plans and Regulations	Structural Collapse	Local Planner	2-3 Years	Staff Time
1.44	Purchase and install three Tideflex one-way inserts into drainage pipes to drain into the DNR Canal and Delaware River. This should reduce interior flooding in case of a major flood episode.	Riegelsville	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	EMC	2-3 years	Local Planning funding, DNR
1.45	Seek training from PEMA/FEMA to address gaps in the administration of local community's Substantial Improvement/Substantial Damage procedures.	All Municipalities	Education and Awareness	Flood, Flash Flood, Ice Jam	Planning and Development	2-3 years	Staff Time, FEMA

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
1.46	Ensure usability of generators and shelter functions for School District schools designated as emergency shelters.	Council Rock School District	Structure and Infrastructure	All Hazards	Council Rock School District	1 Year	Staff Time, Ongoing Program
1.47	Maintain partnerships between School District and BCIU for shelter creation as well as countywide school reunification plan.	Council Rock School District, BCIU	Education and Awareness, Plans and Regulations	All Hazards	Council Rock School District	1 Year	Staff Time, Ongoing Program
1.48	Conduct Emergency Response Drills for all hazards at all schools.	Council Rock School District	Education and Awareness, Plans and Regulations	All Hazards	Council Rock School District	1 Year	Staff Time, Ongoing Program
1.49	Green Lane Storm Sewer Replacement. Replace the existing storm sewer pipe that conveys runoff from the Green Lane Railroad Underpass to the Delaware River to address recurring flooding along the Green Lane corridor between Bristol Pike and Radcliffe Street. The project will include engineering, design, and construction of a new stormwater conveyance system sized to adequately manage storm flows, reduce flood risk, improve roadway accessibility, and enhance public safety.	Bristol Borough, Bristol Township	Structure and Infrastructure	Flood, Hurricane, Tropical Storm, Nor'easter	Borough Manager, Township Manager	1 Year	Building Resilient Infrastructure and Community Resilience (BRIC), Borough and Township General Fund. Highest Priority.
1.50	Morrisville Flood Protection Levee. Conduct a comprehensive inspection and condition assessment of the Morrisville Flood Protection Levee by a qualified engineer or similar professional consultant. The assessment will include an evaluation of the levee's concrete structures, including	Morrisville Borough	Structure and Infrastructure	Flood, Hurricane, Tropical Storm, Nor'easter	Borough Manager	1 Year	Building Resilient Infrastructure and Community Resilience (BRIC), Borough

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	headwalls, toe walls, and other structural components, utilizing water vessel access where necessary to inspect areas inaccessible from land. The resulting report will identify structural deficiencies, deterioration, and recommend repairs, and will serve as the basis for design, engineering, and implementation of rehabilitation projects.						General Fund. Highest Priority.
1.51	Reduce Risk from Natural Hazards within Authority Infrastructure: Installation of 4 th Flood Pump at Wastewater Treatment Facility, Multiple Sewer Pump Upgrades to include Godwin Pump for Back Pumping Capabilities	Warminster Municipal Authority	Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter, Utility Interruption	Warminster Municipal Authority	Ongoing, Work Began March 2026	General Fund, Highest Priority
GOAL 2 – Promote hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population.							
2.1	Work with township/borough officials to increase awareness of model floodplain ordinance and with property owners, including informational mailings to property owners in the 1% annual chance floodplain, and sponsoring a series of workshops about costs and benefits of: Acquiring and minimizing the cost of flood insurance coverage, and Property acquisition, relocation, elevation, dry floodproofing, and wet floodproofing.	Bedminster Township, Haycock Township, Hulmeville Borough, Lower Makefield Township, New Britain Borough, New Britain Township, New Hope Borough, Newtown Borough, Newtown Township, Quakertown Borough, Sellersville Borough, Silverdale Borough, Tinicum Township, Trumbauersville Borough, Tullytown Borough, Warrington	Education and Awareness	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities, Bucks County Planning Commission	Continuously for next 5 years.	Staff time; DCED and PEMA Technical Support

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
		Township, West Rockhill Township					
2.2	Identify and publicize success stories from Bucks County and from other locations that provide a good example for Bucks County as part of an overall public education program.	New Britain Township, Silverdale Borough, Warrington Township, West Rockhill Township	Education and Awareness	All Hazards	Municipalities, Bucks County Planning Commission, Bucks County Emergency Management Agency	Continuously for next 5 years.	Staff time
2.3	Increase awareness by residents of actions to take before, during and after an emergency. Methods include public outreach and education by website, mailings, workshops, media coverage, newsletter, Twitter and Facebook.	East Rockhill Township, Hulmeville Borough, Langhorne Borough, Lower Southampton Township, New Britain Borough, New Britain Township, New Hope Borough, Plumstead Township, Richlandtown Borough, Sellersville Borough, Silverdale Borough, Tinicum Township, Trumbauersville Borough, Warrington Township	Education and Awareness	All Hazards	Municipalities, American Red Cross, Bucks County Emergency Management Agency	Continuously for next 5 years.	Staff time
2.4	Secure flood specific signage that warns travelers that barricades are present to prevent them from traveling into floodwater.	New Hope Borough, Tinicum Township	Education and Awareness	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities, Bucks County	Within 2 years	Municipal and County Capital Budgets; Non-Disaster Funding
2.5	Maintain information and continue outreach to residents with the highest relative vulnerability to the effects of hazards.	Solebury Township, Tinicum Township, Trumbauersville Borough, West Rockhill Township	Education and Awareness	Dam Failure; Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Lightning Strike; Tornado,	Municipalities, Bucks County Emergency Management Agency	Within 5 years	Staff Time; DHS; NOAA Storm Ready

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
				Wind Storm; Utility Interruption; Winter Storm			
2.6	Engage the community on the vulnerability of the historic properties to hazards in the community and identify community members interested in becoming core planning team members to continue the historic property hazard mitigation planning process.	Bensalem Township, Bristol Borough, Doylestown Township, Haycock Township, Richland Township, Solebury Township, Springfield Township, Tinicum Township, Upper Makefield Township, and Yardley Borough	Education and Awareness; Local Plans and Regulations	All Hazards	Municipalities	Continuously for next 5 years.	Staff time; PHMC
2.7	Provide staff and public education on radon dangers and mitigation requirements.	All Municipalities	Education and Awareness	Radon Exposure	Building Code Official	0-1 Years	General Fund - \$500
2.8	Work to provide access to the internet across the County and make sure there are enough cell towers to service the entire County.	Bucks County, All Municipalities (minus Doylestown Township and Warwick Township who completed this action as of the 2026 update)	Structure and Infrastructure	All Hazards	Bucks County	Continuously for the next 5 years	TBD
2.9	Create telework plans.	All Municipalities (minus Doylestown Township and Warwick Township who completed this action as of the 2026 update)	Plans and Regulations	Pandemic and Infectious Disease	Bucks County	0-1 years	Initial County plan completed in pandemic, maintained as an ongoing update and municipal lead.
2.10	Implement increased communications and accessibility for residents to the local government.	Bedminster Township	Education and Awareness	Pandemic and Infectious Disease	Township Manager	4-5 Years	General Fund, Local Government - Under \$10K
2.11	Include messaging about water monitoring and conservation in	Buckingham Township, Doylestown	Education and Awareness	Drought	Planning and Development	Ongoing	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Imple- mentation Schedule	Funding Source and Notes Priority
	water bills. For example: Regularly checking for leaks to minimize water supply losses or installing low-flow water saving showerheads and toilets.	Borough, Warminster Municipal Authority					
2.12	Educate residents regarding the dangers of extreme heat and cold, including identifying symptoms of heat illness and cold injuries, and the steps they can take to protect themselves when extreme temperatures occur.	All Municipalities	Education and Awareness	Extreme Temperatures	Emergency Management	3 Years	Staff Time, Ongoing Need
2.13	Post warning signage at local parks, county fairs and outdoor venues about the risk of lightning strike and hailstorms.	All Municipalities	Education and Awareness	Lightning Strike; Hailstorm	Bucks County Department of Parks and Recreation	2 Years	Staff Time
2.14	Produce and distribute family and traveler emergency preparedness information about severe winter weather hazards. Distribute information through various medias (i.e., radio, local television networks, news sources, social medias) and conduct direct engagement with unhoused communities. Consider providing the outreach materials in multiple languages that are spoken within the planning area.	All Municipalities	Education and Awareness	Winter Storm	Bucks County Emergency Management	5 Years	Staff Time (Ongoing Program)
2.15	Identify specific at-risk populations that may be exceptionally vulnerable in the event of long-term power outages, including populations that are often in critical facilities, such as nursing homes, schools, hospitals, and prisons.	Buckingham Township	Plans and Regulations	All Hazards	Emergency Management	3 Years	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
2.16	Establish a relationship with local National Weather Service Forecast Office through the FHWA Department of Transportation Pathfinder Program for general awareness of upcoming seasons and event-specific information to share out with residents and visitors of the planning area.	Buckingham Township, Doylestown Borough, Wrightstown Township	Education and Awareness	Winter Storm	Emergency Management	2 Years	Staff Time
2.17	Develop a program that organizes outreach to vulnerable populations, including establishing and promoting accessible heating or cooling centers in the community and community check-ins for vulnerable populations during periods of extreme temperatures.	Doylestown Borough	Education and Awareness	Extreme Temperatures	Emergency Management	2 Years	Staff Time
2.18	Develop targeted outreach to unhoused populations on their hazard risks. Leverage existing working relationships with unhoused communities and/or connect with regional advisors in the U.S. Interagency Council on Homelessness.	Doylestown Borough	Education and Awareness	Lightning Strike	Planning and Development	2 Years	Staff Time
2.19	Produce and distribute family and traveler emergency preparedness information about severe winter weather hazards. Distribute information through various medias (i.e., radio, local television networks, news sources, social medias) and conduct direct engagement with unhoused communities. Consider providing the outreach materials in multiple	Doylestown Borough	Education and Awareness	Winter Storm	Emergency Management	5 Years	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	languages that are spoken within the planning area.						
2.20	Include safety strategies for severe winter weather in driver education classes and materials. Encourage drivers to have a car safety kit when traveling during the winter season.	Doylestown Borough, Middletown Township	Education and Awareness	Winter Storm, Transpiration Incidents	Emergency Management	3 Years	Staff Time
2.21	Conduct tornado drills in schools and public buildings.	All Municipalities	Education and Awareness	Tornado, Windstorm	Municipalities	Ongoing	Staff Time
2.22	Organize a local fire department tour to show local elected officials and planners the most vulnerable areas of the community's wildland-urban interface and increase their understanding of risks.	Middletown Township, Yardley Borough	Education and Awareness	Wildfire	Emergency Management	1 Year	Staff Time
2.23	Work with local fire departments to conduct education programs in schools.	All Municipalities	Education and Awareness	Wildfire	Municipalities	2 Years	Staff Time
2.24	Improve coordination to reduce risk from hazardous material incidents and conduct information sessions and trainings to educate and prepare local officials and first responders.	All Municipalities	Education and Awareness	Hazardous Materials Release	Emergency Management	Ongoing	Staff Time
2.25	Advise the public about the local flood hazard, flood insurance, and flood protection measures. Make sure to provide outreach materials in relevant languages and to create an equitable outreach process that can reach the most vulnerable and disadvantaged members of your community.	Yardley Borough	Education and Awareness	Flood, Flash Flood, Ice Jam	Planning and Development	5 Years	Staff Time
2.26	Educate homeowners and renters on how to protect their pipes, including how to insulate outdoor	Yardley Borough	Education and Awareness	Extreme Temperatures	Emergency Management	2 Years	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	water pipes and disconnecting hoses and turning off water to sprinklers.						
2.27	Make FEMA B-526, "Earthquake Safety Checklist" available to homeowners and renters to use to retrofit vulnerable homes and increase preparedness.	All Municipalities	Education and Awareness	Earthquake	Local Emergency Services	1 Year	Staff Time
2.28	Conduct fire education awareness training to students throughout multiple communities within the School District.	Council Rock School District, All Municipalities	Education and Awareness	Wildfire	Council Rock School District	1 year	Staff Time, Ongoing
2.29	Education, Outreach, and Public Awareness Campaigns including Stormwater Education and MS4	Warminster Municipal Authority	Education and Awareness	All Hazards	Warminster Municipal Authority	Ongoing	Staff Time, Ongoing Program
GOAL 3 – Enhance county mitigation program and support efforts to increase municipal and authority mitigation capabilities and planning.							
3.1	Pre-populating FEMA's Substantial Damage Estimator Tool.	Yardley Borough	Local Plans and Regulations; Structure and Infrastructure	Flood, Flash Flood, Ice Jam	EMC	0-1 Years	General Budget
3.2	Utilize available county GIS Resources for municipal hazard related planning and outreach.	Tinicum Township	Education and Awareness; Local Plans and Regulations	Dam Failure; Earthquake; Hazardous Materials Release, Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Landslide; Lightning Strike; Pandemic and Infectious Disease; Radon Exposure; Structure Collapse; Subsidence, Sinkhole; Terrorism; Tornado, Wind Storm; Urban Fire and Explosion; Utility Interruption; Wildfire; Winter Storm	Municipalities, Bucks County Planning Commission, Bucks County Emergency Management Agency	Within 5 years	Staff time; Non-Disaster Funding

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
3.3	Review and update countywide datasets and coordinate with municipalities during this update. Identify method for distributing updated data.	Bucks County	Education and Awareness; Local Plans and Regulations	All Hazards	Bucks County Planning Commission and Bucks County GIS	Within 5 years	Staff Time, County Budget
3.4	Distribute and promote the inclusion of vulnerability analysis information as part of periodic plan review and revisions at the township/borough level.	New Britain Township	Education and Awareness; Local Plans and Regulations	All Hazards	Municipalities, Bucks County Planning Commission	Continuously for next 5 years.	Staff Time; HMGP; PDM
3.5	Integrate evaluation of snow-removal and emergency access logistics with new development planning.	Doylestown Borough, East Rockhill Township, New Britain Township, Plumstead Township, Silverdale Borough	Local Plans and Regulations	Winter Storm	Municipalities, Bucks County Planning Commission	Continuously for next 5 years.	Staff Time
3.6	Update local zoning ordinances	Buckingham Township	Local Plans and Regulations	All Hazards	Township Manager	0-1 years	Operating budget - Estimated \$5K
3.7	Consider extra permitting requirements for mines and pipelines in areas with carbonate rock.	Bedminster Township, Buckingham Township, Doylestown Township, Durham Township, East Rockhill Township, Lower Makefield Township, Lower Southampton Township, Milford Township, New Hope Borough, Newtown Borough, Newtown Township, Nockamixon Township, Northampton Township, Plumstead	Local Plans and Regulations	Subsidence, Sinkholes; Gas and Liquid Pipelines	Local Government	Continuously for next 5 years	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
		Township, Quakertown Borough, Riegelsville Borough, Solebury Township, Springfield Township, Tinicum Township, Upper Makefield Township, Upper Southampton Township, Warminster Township, Warrington Township, Warwick Township					
3.8	Evaluate adequacy of township/borough building code implementation.	Haycock Township, New Britain Township, Plumstead Township, Silverdale Borough, Springfield Township, Upper Southampton Township	Local Plans and Regulations	Dam Failure; Earthquake; Hazardous Materials Release; Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Landslide; Lightning Strike; Structural Collapse; Subsidence, Sinkhole; Tornado, Wind Storm; Urban Fire and Explosion; Utility Interruption; Wildfire; Winter Storm	Municipalities	Continuously for next 5 years.	Staff Time
3.9	Encourage increasing design wind and/or snow load for future development.	Haycock Township, New Britain Township, Silverdale Borough, Upper Southampton Township	Local Plans and Regulations	Hurricane, Tropical Storm, Nor'easter; Tornado, Wind Storm; Winter Storm	Municipalities	Continuously for next 5 years.	Staff Time
3.10	Train the municipal building inspectors to consistently enforce the building code.	Chalfont Borough, Doylestown Borough, East Rockhill Township, New Britain Township, Plumstead Township, Silverdale Borough, Upper	Local Plans and Regulations; Structure and Infrastructure	Dam Failure; Earthquake; Hazardous Materials Release; Extreme Temperature; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Landslide; Lightning Strike;	Municipalities, Bucks County	Continuously for next 5 years.	Staff time; DCED and PEMA Technical Support

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
		Southampton Township, West Rockhill Township		Structural Collapse; Subsidence, Sinkhole; Tornado, Wind Storm; Urban Fire and Explosion; Utility Interruption; Wildfire; Winter Storm			
3.11	Reach out to municipalities annually and ask them to advise on any changes in their local ordinances.	Bucks County	Local Plans and Regulations	All Hazards	Bucks County Planning Commission	Ongoing	Staff Time
3.12	Continue non-structural measures for mitigation of flood hazard per the December 2001 "Neshaminy Creek Supplemental Watershed Work Plan No. 5." The plan includes the following major components: Flood warning system, Voluntary property acquisition, Voluntary building elevation and floodproofing, and Continuation/ enhancement of floodplain ordinances, flood insurance, and stormwater management.	<u>Involved with Acquisition, Elevation, Ordinances and Stormwater Management:</u> Bristol Township, Bensalem Township, Buckingham Township, Hulmeville Borough, Middletown Township, Newtown Township, Lower Southampton Township, Northampton Township, Warwick Township, Wrightstown Township <u>Involved with Ordinances and Stormwater Management:</u> Buckingham Township, Doylestown Borough, New Britain Borough, New Britain	Local Plans and Regulations; Structure and Infrastructure	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Municipalities, Bucks County	Continue implementing plan over next 5 years.	USDA- NRCS

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
		Township, Warminster Township, Warrington Township, Warwick Township					
3.13	Develop Disaster Recovery plan that examines impact and plans outreach and continuity of operations for disaster events. Implements steps from planning process that could mitigate impacts and speed recovery for on residents, businesses, and government.	Doylestown Township, Plumstead Township	Local Plans and Regulations	All Hazards	Municipalities	Continuously for next 5 years.	Staff time; DHS
3.14	Continue coordination and planning to mitigate, prepare, and respond to local hazardous materials facilities.	Doylestown Borough, Richlandtown Borough, Tullytown Borough	Local Plans and Regulations	Hazardous Materials Release	Municipalities, Hazardous Materials Facilities	Continuously for next 5 years.	Staff time; DHS
3.15	Continue coordination and planning with local colleges and universities to be partners to mitigate, prepare, and respond to hazards.	Delaware Valley College, Holy Family University - Bucks County, Philadelphia Biblical University, Doylestown Township, Langhorne Borough, New Britain Borough, Newtown Township	Local Plans and Regulations	All Hazards	Municipalities, Delaware Valley College, Holy Family University - Bucks County, Philadelphia Biblical University	Continuously for next 5 years.	Staff time; DHS
3.16	Evaluate and consider implementing activities to secure "Firewise" designation.	Bedminster Township, Bristol Township, Durham Township, East Rockhill Township, Falls Township, Haycock Township, Hilltown Township, Milford Township, Nockamixon Township, Plumstead	Education and Awareness; Local Plans and Regulations	Wildfire	Municipalities, DCNR Management Agency	Continuously for next 5 years.	Staff time, National Fire Protection Agency, DCNR Bureau of Forestry

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
		Township, Richland Township, Solebury Township, Springfield Township, Tinicum Township, West Rockhill Township					
3.17	Convene regular meetings of a restructured HMPT to discuss issues and progress related to the implementation of the plan.	Bucks County, All Municipalities	Local Plans and Regulations	All Hazards	Bucks County Planning Commission, Bucks County Emergency Management Agency	Continuously for next 5 years.	Staff time
3.18	Link available technical assistance to communities that have residents interested in HMA grants yet need additional capacity to pursue complicated application and management process.	Bensalem Township, Bucks County	Local Plans and Regulations	All Hazards	Bucks County Planning Commission, Bucks County Emergency Management Agency	Continuously for next 5 years.	Staff time
3.19	Train emergency personnel in a basic understanding of railroads and their dangers.	Bucks County	Education and Awareness; Local Plans and Regulations	Transportation Incidents	SEPTA Chief Engineer	Continuously for next 5 years.	Staff time, \$65 per person
3.20	Renew and expand commitments to hazard mitigation planning among partner organizations.	New Britain Township, Silverdale Borough, Upper Southampton Township	Local Plans and Regulations	All Hazards	Municipalities, Bucks County Planning Commission, Bucks County Emergency Management Agency	Continuously for next 5 years.	Staff time
3.21	Evaluate effectiveness of the pandemic protocol implementation and restocking of pandemic response kits.	All Municipalities	Local Plans and Regulations	Pandemic and Infectious Disease	Township manager and Emergency Management Coordinator	0-1 years	Municipal General Funds
3.22	Develop a floodplain management plan and update it regularly	Buckingham Township, Yardley Borough	Plans and Regulations	Flood, Flash Flood, Ice Jam	Planning and Development	5 years	Staff Time
3.23	Develop a drought emergency plan.	Buckingham Township, Doylestown Borough	Plans and Regulations	Drought	Planning and Development	5 Years	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Imple- mentation Schedule	Funding Source and Notes Priority
3.24	Develop a drought communication plan and early warning system to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.	All Municipalities	Plans and Regulations; Education and Awareness	Drought	Emergency Management	5 Years	Staff Time
3.25	Develop agreements for secondary water sources that may be used during drought conditions.	Doylestown Borough	Plans and Regulations	Drought	Emergency Management	3 Years	Staff Time
3.26	Update local ordinances require minimum and maximum temperatures in codes for housing, critical facilities, community spaces, and other congregate settings.	Doylestown Borough, Wrightstown Township	Plans and Regulations	Extreme Temperatures	Planning and Development	2 Years	Staff Time
3.27	Adopt the latest published editions of relevant consensus-based codes and standards, such as the International Building Code (IBC), International Residential Code (IRC), and International Existing Building Code (IEBC).	Yardley Borough	Plans and Regulations	All Hazards	Planning and Development	5 Years	Staff Time
3.28	Create an emergency plan for backup power during hazard events.	All Municipalities	Plans and Regulations	Utility Interruption	Local Planner	1 Year	Staff Time
3.29	Create a plan for responding to an urban fire or explosion.	All Municipalities	Plans and Regulations	Urban Fire and Explosion	Local Planner	1 Year	Staff Time
3.30	Conduct an exercise to respond to a terrorism event.	All Municipalities	Plans and Regulations	Terrorism	Local Planner	1 Year	Staff Time
3.31	Train local staff on cyber security initiatives and how to prevent an attack.	All Municipalities	Education and Awareness	Cyber Terrorism	Local Emergency Services	1 Year	Staff Time, Non-Disaster Funding
3.32	Maintain liaisons with municipal police, EMS, and federal officials on school safety measures.	Council Rock School District	Education and Awareness	Terrorism, Cyber Terrorism	Council Rock School District	1 Year	Staff Time, Ongoing Priority

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
3.33	Expand Opportunities for Water Management Capacity – Survey Identified Basin to Accommodate More Capacity	Warminster Municipal Authority	Structure and Infrastructure, Natural Systems Protection	Flood, Flash Flood, Ice Jam, Hurricane, Tropical Storm, Nor’easter, Drought	Warminster Municipal Authority	Ongoing, 0-1 Years	Staff Time, Medium Priority
GOAL 4 – Protect natural resources within hazard areas and use them to reduce risk and losses.							
4.1	Increasing open space cache in floodplain.	Yardley Borough	Structure and Infrastructure	Flood, Flash Flood, Ice Jam	Borough Manager	0-1 Years	General Fund
4.2	Evaluate and implement projects to protect and improve natural environment along waterways with projects including preservation, conversation easements, and bank restoration.	East Rockhill Township, Yardley Borough	Natural Systems Protection	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor’easter	Municipal Environmental Advisory Councils, Watershed Associations, Private property owners	Continuously for next 5 years.	CIP, DEP
4.3	Build on existing Stormwater Management Planning and encourage implantation of small stormwater mitigation projects on private property (i.e. rain gardens, rain barrels, natural basins).	Doylestown Borough, Penndel Borough, Tinicum Township, Warrington Township, Yardley Borough, Warminster Municipal Authority	Natural Systems Protection	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor’easter	Municipal Environmental Advisory Councils, Watershed Associations, Private property owners	Continuously for next 5 years.	Private property owners; Water-shed Assoc. Technical Support
4.4	Restore native plants and wetlands to the watershed to address flooding issues.	Upper Makefield Township	Natural Systems Protection	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor’easter	Deputy Emergency Management Coordinator	4-5 years	PA Dept. of Natural Resources, BRIC, Township General Fund
4.5	Apply soil stabilization measures, such as planting soil-stabilizing native vegetation on steep, publicly-owned slopes near roadways.	All Municipalities	Structure and Infrastructure	Landslide	Planning and Development	5 Years	Non-Disaster Funding
4.6	Create a wildfire scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community	Wrightstown Township, Tinicum Township	Education and Awareness	Wildfire	Emergency Management	3 Years	Staff Time

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
	to develop wildfire mitigation priorities.						
4.7	Establish a "green infrastructure" program to link, manage, and expand existing parks, preserves, greenways, etc.	Yardley Borough	Plans and Regulations	Flood, Flash Flood, Ice Jam	Planning and Development	5 Years	Non-Disaster Funding
GOAL 5 – Protect people and assets from the potential impacts of high hazard potential dams.							
5.1	Work with Township Public Works, Police, and local Fire Police to evaluate and develop evacuation plan/routes for dam failure.	All Municipalities	Local Plans and Regulations	Dam Failure	Police & Public Works	2-3 years	DHS grants and local funding - \$5K for staff time
5.2	Identify and make any and all repairs to existing class A-1 and B-1 dams, as well as any other dams in the County that may be applicable.	Bucks County	Structure and Infrastructure	Dam Failure	Public Works Director/ Deputy Manager	Within 5 years	HHPD
5.3	Provide notice of funding opportunity and supporting documentation from the county HMP to EMCs of municipalities with HHPDs to promote rehabilitation and safety in Bucks County. - Identify mitigation actions to reduce vulnerabilities to/from eligible HHPDs, such as proposing, enacting or delegating authority for local land use regulations, ordinances and/or construction standards to protect life and property from HHPDs. - Work with HHPD owners to integrate EAPs or a dam incident annex into emergency operations plans. - Delegate authority to local governments to adopt and	Bucks County	Structure and Infrastructure	Dam Failure	Bucks County Planning Commission, HHPDs	Within 5 years	HHPD

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Implementation Schedule	Funding Source and Notes Priority
	enforce restrictive zoning and land use ordinances in designated inundation areas. • Acquire and/or elevate structures both up and downstream of HHPDs.						
5.4	Rehabilitate and/or remove high risk dams throughout the County.	Bucks County	Structure and Infrastructure	Dam Failure	Emergency Management	5-10 years	HHPD
5.5	Develop and maintain relationships with dam owners, including involvement with all Emergency Action Plan updates.	All Municipalities (excl. Bridgeton Township, Durham Township, Riegelsville Borough, Silverdale Borough, Telford Borough)	Local Plans and Regulations	Dam Failure	Emergency Management	Continuously for next 5 years.	Staff Time
5.6	Once dam hazard areas are identified, communities can consider updating land use ordinances. Consider the implications of recognizing dam inundation areas as sensitive areas in zoning ordinances.	Bucks County, All Municipalities	Local Plans and Regulations	Dam Failure	Planning and Zoning, Emergency Management	5+ Years	Staff Time
5.7	Once structures in dam hazard areas are identified, support mitigation projects which will result in the protection of public and private property from floods of specific magnitudes. Eligible projects include but are not limited to: 1) acquisition of hazard-prone structures 2) elevation of flood-prone structures 3) minor structural flood control projects 4) relocation of structures from hazard-prone areas 5) retrofitting of existing building, facilities, and infrastructure.	Bucks County	Structure and Infrastructure	Dam Failure	Planning and Zoning, Emergency Management	5+ Years	Staff Time, FEMA HHPD, PA DCED, PDFAP

Table 6.4-1 2026 Mitigation Action Plan

#	Action Description	Community/ Organization	Category	Hazard	Lead Agency/ Department	Impleme ntation Schedule	Funding Source and Notes Priority
5.8	Obtain and compile updated Department of Environmental Protection inundation data and Emergency Action Plan vulnerability data as it becomes available to inform future plan updates.	Bucks County	Plans and Regulations	Dam Failure	Emergency Management	Ongoing	Staff Time, High Priority
5.9	Maintain a GIS layer of the location of all permitted dams within the County, categorized by priority concern. Utilize dam location layer, inundation data, building footprints, and tax parcel information to develop potential evacuation measures in the event of a breach or failure.	Bucks County	Plans and Regulations	Dam Failure	Planning and Development, Emergency Management	Ongoing	Staff Time, High Priority

At least one mitigation action was established for each hazard in Bucks County. More than one action is identified for several hazards. Every participating jurisdiction has at least one mitigation action for the hazards they are at risk to.

These mitigation actions have either been carried over from the 2021 HMP or captured during the planning process for the 2026 HMP update. During the development of this plan, there were key findings and takeaways that demonstrated further potential for future mitigation actions.

Table 6.4-1 lists the 2026 mitigation actions, many of which will require substantial time commitments from staff at the county and local municipalities. While all these activities will be pursued over the next five years, the reality of limited time and resources requires the identification of the feasibility and priority level of mitigation actions. Prioritization allows the individuals and organizations involved to focus their energies and ensure progress on mitigation activities.

Evaluating mitigation actions involves judging each action against certain criteria to determine its feasibility and potential impact. Actions evaluated and prioritized by applying the Multi-Objective Mitigation Action Prioritization criteria. For each action, scores were assigned to each criterion using the following weighted, multi-objective mitigation action prioritization criteria.

- **Effectiveness** (weight: 20% of score): The extent to which an action reduces the vulnerability of people and property.
- **Efficiency** (weight: 30% of score): The extent to which time, effort, and cost is well used as a means of reducing vulnerability.
- **Multi-Hazard Mitigation** (weight: 20% of score): The action reduces vulnerability for more than one hazard.
- **Addresses High Risk Hazard** (weight: 15% of score): The action reduces vulnerability for people and property from a hazard(s) identified as high risk.
- **Addresses Critical Communications/Critical Infrastructure** (weight: 15% of score): The action pertains to the maintenance of critical functions and structures such as transportation, supply chain management, data circuits, etc.

Scores of 1, 2, or 3 were assigned for each multi-objective mitigation action prioritization criterion where 1 is a low score and 3 is a high score. The Efficiency criterion, which considers the cost and effort of each action versus its overall vulnerability reduction benefit, is the most highly weighted criterion as part of the total prioritization score. Actions were prioritized using the cumulative score assigned to each. Each mitigation action was then given a priority ranking (Low, Medium, and High) based on the following:

- Low Priority: 1.0 – 1.8
- Medium Priority: 1.9 – 2.4
- High Priority: 2.5 – 3.0

Table 6.4-2 presents the cumulative results of the prioritization of mitigation actions.

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
1.1	Proceed with grant applications to suitably protect repetitive-loss properties 1% annual chance floodplain (for owners interested in FEMA mitigation funding).	3	3	2	3	1	2.5
1.2	Continue identifying protection measures to operate critical facilities. Proceed with grant applications to suitably protect and continue operations of critical facilities in the 1% annual chance floodplain and at risk to utilities interruption from flooding and other hazards.	3	3	3	3	3	3.0
1.3	Continue identifying protection measures to operate businesses and protect residences. Proceed with grant applications for infrastructure that protects community from 1% annual chance floodplain.	3	3	2	3	3	2.8
1.4	Evaluate, implement, and perform mitigation projects identified in this and other planning mechanisms, including acquisition, elevation, mitigation reconstruction, foundation and building stabilization, securing access to generator power and other mitigation methods.	3	2	3	3	3	2.7
1.5	Township will replace 5 existing culverts on Top Rock Trail to mitigate flooding impacts of existing substandard drainage conditions in this area of the Township. This is part of an on-going effort to improve roadside drainage throughout the Township.	2	2	3	3	1	2.2
1.6	Clean out all street drains, repair and/or replace culverts and drain grates.	2	2	3	3	1	2.2
1.7	Install storm sewer along a section of Peppermint Road to address an ongoing flooding issue that impacts neighboring downstream properties.	1	2	2	3	3	2.1
1.8	Elevate existing homes in the floodplain to limit damage during future flood events	2	3	2	3	3	2.6
1.9	Repair culvert and swales on Lonely Road.	2	2	3	3	3	2.5
1.10	Replace culvert on Tabor Road	2	2	3	3	3	2.5
1.11	Repair/improve Modla/Park drainage swale.	1	2	2	3	3	2.1
1.12	Improving stormwater management in floodplain by jet cleaning storm drains and installing backflow preventers. Secondly, Yardley Borough will pursue the installation of additional storm drains and pipes to an area without.	3	2	2	3	3	2.5
1.13	Continue elevating flood prone structures.	1	2	2	3	3	2.1
1.14	Evaluate and/or pursue Community Rating System (CRS) participation for insurance premium reduction (and flood damage reduction).	3	2	1	3	1	2.0
1.15	Obtain information for structures in the areas with the highest relative vulnerability to determine the best property protection methods. Information to be obtained includes: Lowest-floor elevation, Number of stories, Presence of a basement, and Market and/or replacement value.	2	2	2	3	1	2.0
1.16	Obtain information for all remaining structures in the 1% annual chance floodplain to determine the best property protection methods to promote with individual property owners. Techniques for gathering information over time should include developing and	3	2	1	3	1	2.0

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
	implementing a program for integrated information “capture” at key points in normal township administrative procedures, including applications for building permits at township/borough offices.						
1.17	Provide a comprehensive update to the database that records floodplain properties and elevation certificates.	3	3	2	3	3	2.8
1.18	Identify all storage of hazardous materials in floodplains (including non-addressable structures, such as propane tanks).	2	3	3	3	2	2.7
1.19	Evaluate alternative methods to minimize risk from existing storage areas.	2	3	3	3	2	2.7
1.20	Assess means to prevent future storage in floodplain.	3	2	3	3	2	2.6
1.21	Identify critical facilities with the highest vulnerability to the effects of power outage (i.e., hospitals, nursing homes, fire, police, rescue, and emergency management).	2	2	2	3	3	2.3
1.22	Develop action plan for reducing potential damage and loss of function at identified critical facilities and infrastructure.	1	2	3	3	3	2.3
1.23	Add additional water main on North Main Street to provide additional water service for residents and especially for fire fighting activity.	3	3	3	3	3	3.0
1.24	Complete interconnection of an existing public water system with facilities owned by North Wales Water Authority to ensure redundancy of supply in the Township's water system	3	2	2	3	3	2.5
1.25	Replace aging sewage pump station to reduce outages and prevent storm damage.	2	2	1	3	2	2.0
1.26	Conduct qualitative evaluation process for managing stranded rural residents and travelers (e.g., temporary shelters).	2	2	3	3	1	2.2
1.27	If warranted, implement additional storm shelters and warning systems near vulnerable communities, including: Identify structures that can be used as tornado safe rooms (some may require structure modifications), or NOAA weather radios for vulnerable populace.	3	3	3	3	1	2.7
1.28	Review prevalence of transportation accidents and known infrastructure deficiencies and advocate for projects and funding that will increase safety.	3	2	1	2	2	2.0
1.29	Replace the deck of an existing bridge on Schultz Road that is structurally deficient to ensure that the transportation system of the Township is not adversely impacted if the bridge must be closed to traffic.	3	2	1	2	2	2.0
1.30	Implement signal improvements at intersections that frequently experience traffic accidents.	3	2	1	2	1	1.9
1.31	Traffic calming on Main Street and Barringer Avenue.	1	3	1	2	3	2.1
1.32	Bridge replacement or rehab on Headquarters Rd spanning the Tinicum Creek due to structural failure.	3	3	2	2	3	2.7
1.33	Inventory the historic properties vulnerable to the identified hazards, assess vulnerability of these assets, and establish preservation priorities by determining which assets are most valuable to the community.	3	2	3	3	1	2.4
1.34	Evaluate and implement projects to manage stormwater effectively.	3	2	2	3	2	2.4
1.35	Routinely clean and repair stormwater drains.	2	3	1	3	1	2.1

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Adds High Risk Hazard	Adds Communications/Critical Infrastructure	
1.36	Implement traffic calming measures at key community intersections.	2	3	1	2	1	2.0
1.37	Partner with local emergency management, critical facilities (e.g., hospitals) and other organizations to explore opportunities with the StormReady program.	2	2	2	3	3	2.3
1.38	Plan for and maintain adequate road and debris clearing capabilities	2	2	1	3	2	2.0
1.39	Replace the Weiss Road bridge.	3	1	1	3	3	2.0
1.40	Repair two bridges at Allentown Road and Route 663.	3	1	1	3	3	2.0
1.41	Install lightning and surge protection devices and methods, such as lightning rods and grounding, on communications infrastructure, critical electronic equipment, and other critical facilities.	2	3	1	1	1	1.8
1.42	Conduct a verification study of FEMA's repetitive loss inventory and developing an associated tracking database to prioritize and share information.	3	3	1	3	2	2.5
1.43	Identify structures at risk to collapse and create a strategy for mitigation.	2	2	1	1	2	1.7
1.44	Purchase and install 3 TideFlex one-way inserts into drainage pipes to drain into the DNR Canal and Delaware River.	2	2	1	3	2	2.0
1.45	Seek training from PEMA/FEMA to address gaps in administration of local community's Substantial Improvement/Substantial Drainage	2	2	1	1	2	1.7
1.46	Ensure usability of generators and shelter functions at School District schools designated as emergency shelters	3	3	1	3	2	2.5
1.47	Maintain partnerships between School District and BCIU for shelter creation as well as countywide school reunification plan.	3	2	1	3	1	2.0
1.48	Conduct Emergency Response Drills for all hazards at all schools	2	1	1	3	1	1.5
1.49	Green Lane Storm Sewer Replacement. Replace the existing storm sewer pipe that conveys runoff from the Green Lane Railroad Underpass to the Delaware River to address recurring flooding along the Green Lane corridor between Bristol Pike and Radcliffe Street. The project will include engineering, design, and construction of a new stormwater conveyance system sized to adequately manage storm flows, reduce flood risk, improve roadway accessibility, and enhance public safety.	3	2	1	3	2	2.0
1.50	Morrisville Flood Protection Levee. Conduct a comprehensive inspection and condition assessment of the Morrisville Flood Protection Levee by a qualified engineer or similar professional consultant. The assessment will include an evaluation of the levee's concrete structures, including headwalls, toe walls, and other structural components, utilizing water vessel access where necessary to inspect areas inaccessible from land. The resulting report will identify structural deficiencies, deterioration, and recommend repairs, and will serve as the basis for design, engineering, and implementation of rehabilitation projects.	3	3	1	3	2	2.5
1.51	Reduce Risk from Natural Hazards within Authority Infrastructure: Installation of a 4 th Flood Pump at Wastewater Treatment Facility, Multiple Sewer Pump Upgrades to include Godwin Pump for Back Pumping Capabilities	3	2	3	3	1	2.4

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
2.1	Work with township/borough officials to increase awareness of model floodplain ordinance and with property owners, including informational mailings to property owners in the 1% annual chance floodplain, and sponsoring a series of workshops about costs and benefits of: Acquiring and minimizing the cost of flood insurance coverage, and Property acquisition, relocation, elevation, dry floodproofing, and wet floodproofing.	3	2	1	3	1	2.0
2.2	Identify and publicize success stories from Bucks County and from other locations that provide a good example for Bucks County as part of an overall public education program.	1	1	3	3	1	1.7
2.3	Increase awareness by residents of actions to take before, during and after an emergency. Methods include public outreach and education by website, mailings, workshops, media coverage, newsletter, Twitter and Facebook.	2	1	3	3	1	1.9
2.4	Secure flood specific signage that warns travelers that barricades are present to prevent them from traveling into floodwater.	2	1	1	3	1	1.5
2.5	Maintain information and continue outreach to residents with the highest relative vulnerability to the effects of hazards.	2	2	3	3	1	2.2
2.6	Engage the community on the vulnerability of the historic properties to hazards in the community and identify community members interested in becoming core planning team members to continue the historic property hazard mitigation planning process.	3	2	3	3	1	2.4
2.7	Provide staff and public education on radon dangers and mitigation requirements.	1	2	1	1	2	1.5
2.8	Work to provide access to the internet across the County and make sure there are enough cell towers to service the entire County.	2	2	3	3	1	2.2
2.9	Create telework plans.	3	3	1	1	2	2.2
2.10	Implement increased communications and accessibility for residents to the local government.	2	2	1	2	1	1.7
2.11	Include messaging about water monitoring and conservation in water bills. For example: Regularly checking for leaks to minimize water supply losses or installing low-flow water saving showerheads and toilets.	1	3	1	2	1	1.8
2.12	Educate residents regarding the dangers of extreme heat and cold, including identifying symptoms of heat illness and cold injuries, and the steps they can take to protect themselves when extreme temperatures occur.	1	3	1	3	1	1.9
2.13	Post warning signage at local parks, county fairs and outdoor venues about the risk of lightning strike and hailstorms.	1	3	1	1	1	1.6
2.14	Produce and distribute family and traveler emergency preparedness information about severe winter weather hazards. Distribute information through various medias (i.e., radio, local television networks, news sources, social medias) and conduct direct engagement with unhoused communities. Consider providing the outreach materials in multiple languages that are spoken within the planning area.	1	3	1	2	1	1.8
2.15	Identify specific at-risk populations that may be exceptionally vulnerable in the event of long-term power outages, including	2	2	3	3	1	2.2

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
	populations that are often in critical facilities, such as nursing homes, schools, hospitals, and prisons.						
2.16	Establish a relationship with local National Weather Service Forecast Office through the FHWA Department of Transportation Pathfinder Program for general awareness of upcoming seasons and event-specific information to share out with residents and visitors of the planning area.	2	2	1	1	1	1.5
2.17	Develop a program that organizes outreach to vulnerable populations, including establishing and promoting accessible heating or cooling centers in the community and community check-ins for vulnerable populations during periods of extreme temperatures.	2	1	3	3	1	1.9
2.18	Develop targeted outreach to unhoused populations on their hazard risks. Leverage existing working relationships with unhoused communities and/or connect with regional advisors in the U.S. Interagency Council on Homelessness.	2	1	2	2	1	1.6
2.19	Produce and distribute family and traveler emergency preparedness information about severe winter weather hazards. Distribute information through various medias (i.e., radio, local television networks, news sources, social medias) and conduct direct engagement with unhoused communities. Consider providing the outreach materials in multiple languages that are spoken within the planning area.	1	3	1	2	1	1.8
2.20	Include safety strategies for severe winter weather in driver education classes and materials. Encourage drivers to have a car safety kit when traveling during the winter season.	1	3	1	3	1	1.9
2.21	Conduct tornado drills in schools and public buildings.	2	3	1	2	2	2.1
2.22	Organize a local fire department tour to show local elected officials and planners the most vulnerable areas of the community's wildland-urban interface and increase their understanding of risks.	1	1	2	2	1	1.4
2.23	Work with local fire departments to conduct education programs in schools.	1	1	2	2	1	1.4
2.24	Improve coordination to reduce risk from hazardous material incidents and conduct information sessions and trainings to educate and prepare local officials and first responders.	2	2	2	2	2	2.0
2.25	Advise the public about the local flood hazard, flood insurance, and flood protection measures. Make sure to provide outreach materials in relevant languages and to create an equitable outreach process that can reach the most vulnerable and disadvantaged members of your community.	2	2	1	3	1	1.8
2.26	Educate homeowners and renters on how to protect their pipes, including how to insulate outdoor water pipes and disconnecting hoses and turning off water to sprinklers.	2	2	1	2	1	1.7
2.27	Make FEMA B-526, "Earthquake Safety Checklist" available to homeowners and renters to use to retrofit vulnerable homes and increase preparedness.	2	2	1	2	1	1.7
2.28	Conduct fire education awareness training to students throughout multiple communities within the School District	2	3	1	2	1	1.7

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
2.29	Education, Outreach, and Public Awareness Campaigns including Stormwater Education and MS4	2	2	1	3	1	1.8
3.1	Pre-populating FEMA's Substantial Damage Estimator Tool.	1	2	1	3	2	1.8
3.2	Utilize available county GIS Resources for municipal hazard related planning and outreach.	2	2	3	3	2	2.4
3.3	Review and update countywide datasets and coordinate with municipalities during this update. Identify method for distributing updated data.	2	2	3	3	2	2.4
3.4	Distribute and promote the inclusion of vulnerability analysis information as part of periodic plan review and revisions at the township/borough level.	2	3	3	3	3	2.8
3.5	Integrate evaluation of snow-removal and emergency access logistics with new development planning.	2	3	2	3	3	2.6
3.6	Update local zoning ordinances	2	2	3	3	2	2.4
3.7	Consider extra permitting requirements for mines and pipelines in areas with carbonate rock.	2	2	2	2	3	2.2
3.8	Evaluate adequacy of township/borough building code implementation.	2	2	3	3	1	2.2
3.9	Encourage increasing design wind and/or snow load for future development.	2	1	3	3	1	1.9
3.10	Train the municipal building inspectors to consistently enforce the building code.	2	2	3	3	1	2.2
3.11	Reach out to municipalities annually and ask them to advise on any changes in their local ordinances.	2	2	3	3	2	2.4
3.12	Continue non-structural measures for mitigation of flood hazard per the December 2001 "Neshaminy Creek Supplemental Watershed Work Plan No. 5." The plan includes the following major components: Flood warning system, Voluntary property acquisition, Voluntary building elevation and floodproofing, and Continuation/ enhancement of floodplain ordinances, flood insurance, and stormwater management.	3	3	2	3	2	2.7
3.13	Develop Disaster Recovery plan that examines impact and plans outreach and continuity of operations for disaster events. Implements steps from planning process that could mitigate impacts and speed recovery for on residents, businesses, and government.	2	2	3	3	2	2.4
3.14	Continue coordination and planning to mitigate, prepare, and respond to local hazardous materials facilities.	3	2	3	3	3	2.7
3.15	Continue coordination and planning with local colleges and universities to be partners to mitigate, prepare, and respond to hazards.	3	2	3	3	2	2.6
3.16	Evaluate and consider implementing activities to secure "Firewise" designation.	3	2	1	2	2	2.0
3.17	Convene regular meetings of a restructured HMPT to discuss issues and progress related to the implementation of the plan.	2	2	3	3	2	2.4
3.18	Link available technical assistance to communities that have residents interested in HMA grants yet need additional capacity to pursue complicated application and management process.	3	2	3	3	1	2.4

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
3.19	Train emergency personnel in a basic understanding of railroads and their dangers.	2	2	3	3	2	2.4
3.20	Renew and expand commitments to hazard mitigation planning among partner organizations.	2	2	3	3	2	2.4
3.21	Evaluate effectiveness of the pandemic protocol implementation and restocking of pandemic response kits.	3	2	1	2	2	2.0
3.22	Develop a floodplain management plan and update it regularly	2	2	1	3	2	2.0
3.24	Develop a drought emergency plan.	2	2	1	2	1	1.7
3.25	Develop a drought communication plan and early warning system to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.	2	2	1	2	1	1.7
3.26	Develop agreements for secondary water sources that may be used during drought conditions.	3	1	1	2	1	1.6
3.27	Update local ordinances require minimum and maximum temperatures in codes for housing, critical facilities, community spaces, and other congregate settings.	2	2	1	3	1	1.8
3.28	Adopt the latest published editions of relevant consensus-based codes and standards, such as the International Building Code (IBC), International Residential Code (IRC), and International Existing Building Code (IEBC).	2	2	1	3	1	1.8
3.29	Create an emergency plan for backup power during hazard events.	2	2	1	2	2	1.8
3.30	Create a plan for responding to an urban fire or explosion.	2	2	1	2	1	1.7
3.31	Conduct an exercise to respond to a terrorism event.	2	2	1	1	1	1.5
3.31	Train local staff on cyber security initiatives and how to prevent an attack.	2	2	1	3	1	1.8
3.32	Maintain liaisons with municipal police, EMS, and federal officials on school safety measures.	2	2	1	3	1	1.8
3.33	Expand opportunities for water management capacity – survey identified basin to accommodate more capacity	2	2	1	2	1	1.7
4.1	Increasing open space cache in floodplain.	1	2	2	3	3	2.1
4.2	Evaluate and implement projects to protect and improve natural environment along waterways with projects including preservation, conversation easements, and bank restoration.	3	2	2	3	2	2.4
4.3	Build on existing Stormwater Management Planning and encourage implantation of small stormwater mitigation projects on private property (i.e. rain gardens, rain barrels, natural basins).	3	2	2	3	2	2.4
4.4	Restore native plants and wetlands to the watershed to address flooding issues.	3	3	2	2	1	2.4
4.5	Apply soil stabilization measures, such as planting soil-stabilizing native vegetation on steep, publicly-owned slopes near roadways.	1	1	1	2	1	1.2
4.6	Create a wildfire scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community to develop wildfire mitigation priorities.	2	1	1	2	1	1.4
4.7	Establish a "green infrastructure" program to link, manage, and expand existing parks, preserves, greenways, etc.	2	2	1	2	1	1.7

Table 6.4-2 Mitigation Action Prioritization

Action Number	Mitigation Action	Multi-Objective Mitigation Action Prioritization Criteria					Total Score
		Effectiveness	Efficiency	Multi-Hazard Mitigation	Addresses High Risk Hazard	Addresses Communications/ Critical Infrastructure	
5.1	Work with Township Public Works, Police, and local Fire Police to evaluate and develop evacuation plan/routes for dam failure.	2	2	1	3	2	2.0
5.2	Identify and make any and all repairs to existing class A-1 and B-1 dams, as well as any other dams in the County that may be applicable.	3	3	2	3	2	2.7
5.3	Provide notice of funding opportunity and supporting documentation from the county HMP to EMCs of municipalities with HHPDs to promote rehabilitation and safety in Bucks County. · Identify mitigation actions to reduce vulnerabilities to/from eligible HHPDs, such as proposing, enacting or delegating authority for local land use regulations, ordinances and/or construction standards to protect life and property from HHPDs. Work with HHPD owners to integrate EAPs or a dam incident annex into emergency operations plans. Delegate authority to local governments to adopt and enforce restrictive zoning and land use ordinances in designated inundation areas. Acquire and/or elevate structures both up and downstream of HHPDs.	3	3	2	3	2	2.7
5.4	Rehabilitate and/or remove High Risk Dams throughout the County	3	2	3	3	3	2.7
5.5	Develop and maintain relationships with dam owners, including involvement with all Emergency Action Plan updates.	2	2	1	3	2	2.0
5.6	Once dam hazard areas are identified, communities can consider updating land use ordinances. Consider the implications of recognizing dam inundation areas as sensitive areas in zoning ordinances.	3	2	3	3	2	2.6
5.7	Once structures in dam hazard areas are identified, support mitigation projects which will result in the protection of public and private property from floods of specific magnitudes. Eligible projects include but are not limited to: 1) acquisition of hazard-prone structures, 2) elevation of flood prone structures, 3) minor structural flood control projects 4) relocation of structures from hazard-prone areas 5) retrofitting of existing building, facilities, and infrastructure	3	2	2	3	2	2.4
5.8	Obtain and compile updated Department of Environmental Protection inundation data and Emergency Action Plan vulnerability data as it becomes available to inform future plan updates.	3	2	3	3	2	2.6
5.9	Maintain a GIS layer of the location of all permitted dams within the County, categorized by priority concern. Utilize dam location layer, inundation data, building footprints, and tax parcel information to develop potential evacuation measures in the event of a breach or failure.	3	2	3	3	3	2.7