



Bucks County Hazard Mitigation Plan Update 2021

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Overview

Hazard mitigation is **any sustained action taken to reduce or eliminate long-term risk to life, property, and the environment resulting from natural and human-made hazards**. The Bucks County Hazard Mitigation Plan (HMP) was developed to identify the vulnerabilities and risks associated with hazards and to define a mitigation strategy to reduce these vulnerabilities. Once approved by Pennsylvania Emergency Management Agency (PEMA) and Federal Emergency Management Agency (FEMA), communities that adopt the 2021 Bucks County Hazard Mitigation Plan (HMP) will be eligible for FEMA disaster grants. CRS communities may also be able to gain points for decreased insurance costs. This HMP could improve a community's bond rating when considering future conditions.

Hazard Mitigation Planning Process

The Bucks County HMP was originally developed in 2004 and then updated in 2011 and 2016. The 2004, 2011, 2016, and 2021 Bucks County HMPs represent the work of government officials, business leaders, community members and non-profit organizations in developing a blueprint for protecting community assets, preserving the economic viability of the community, and saving lives.

The input required to guide the HMP update process was collected through a variety of virtual coordination with stakeholders. Through a collaborative approach to integrate mitigation planning efforts across local agencies, the 2021 HMP update is able to address a diverse set of hazards. After extensive outreach **52 of 54 municipalities participated in the planning process** by attending meetings or providing feedback on local hazards, capabilities and mitigation efforts, 46 municipalities did both.

Over the past several months Bucks County representatives formed a Steering Committee and Hazard Mitigation Planning Team – inviting each community and many partner agencies including watershed coalitions, universities, County departments and agencies, regional transportation agencies, school district officials and more. The members of the steering committee are listed below.

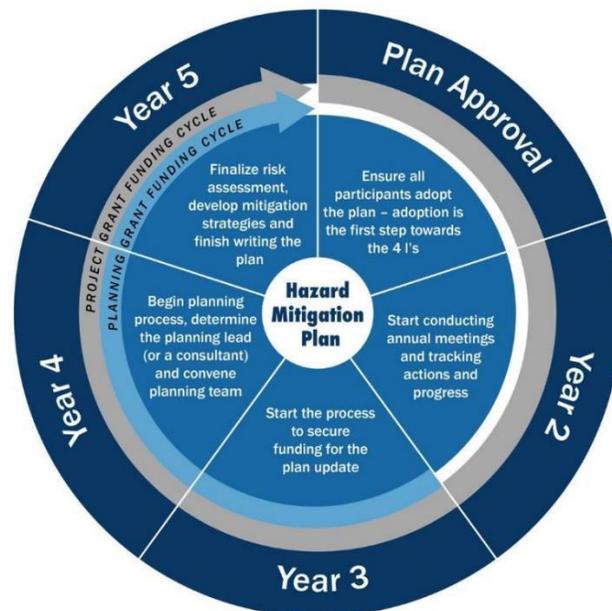


Figure 1: Five-Year HMP Planning Cycle

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Risk Assessment

Assessing and ranking hazards helps communities set goals and priorities for mitigation based on their vulnerabilities. As population increases, industry shifts, technology advances, and climate changes, the list of hazards to which the County is at risk is evolving. Bucks County has taken an all-hazards approach to hazard mitigation planning.

Based on previous plan updates, stakeholder input, research, data collection, and information from the Pennsylvania Hazard Mitigation Plan, 22 hazards were profiled in the 2021 HMP. Hazard profiles include information on location, magnitude, past and future occurrence, and vulnerability of each hazard including potential loss estimates. All hazards identified in the 2016 HMP were expanded on in the 2021 HMP. One new hazard profile was added to the 2021 HMP: Gas and Liquid Pipelines. Also, a COVID-19 appendix was created to expand on the Pandemic and Infectious Disease profile because of the increasing concern due to the emergence and impact of COVID-19 over the past year. Of the 22 hazards profiled, the three **highest-risk hazards include flooding, winter storm, and environmental hazards.**

Hazard profiles in the 2021 HMP include the following Natural and Human-Made Hazards:

- Drought
- Earthquake
- Extreme Temperature
- Flood, Flash Flood, Ice Jam
- Hailstorm
- Hurricane, Tropical Storm, Nor'easter
- Landslide,
- Lightning Strike
- Pandemic and Infectious Disease
- Radon Exposure
- Subsidence, Sinkhole
- Tornado, Windstorm
- Wildfire
- Winter Storm
- Structure Collapse (Infrastructure)
- Dam Failure
- Environmental Hazards (Hazardous Materials Releases)
- Terrorism
- Transportation Accident
- Urban Fire and Explosion
- Utility Interruption
- Gas and Liquid Pipelines



There has been over **\$130 million** paid in insurance claims and over **600 substantial damage claims** made.



There have been **134 winter storm events** over the **past 15 years.**



60% of structures and 64% of critical facilities are within **1.5 miles** of a hazardous materials facility.

Capability Assessment

The HMP includes a review of hazards and the self-reported capabilities and resources communities possess to address those risks. Assessing community capabilities helps to determine the ability of the County and its municipalities to implement a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, and projects.

The assessment has **two primary components:**

1. An inventory of relevant plans, laws, regulations, policies and programs already in place, and
2. An analysis of capacity to carry them out.

These mitigation capabilities include laws and regulations; funding and technical assistance; development and construction management; and planning and programmatic support. Some capabilities established for Bucks County include:

- Bucks County has over 15 existing planning mechanisms including the recently updated Debris Management Plan, Emergency Operations Plan, and the Municipal Waste Management Plan.
- Many communities are clear on what plans and procedures are in place locally.

Mitigation Strategy

In order to develop the Mitigation Strategy, the planning team identified their goals and objectives for reducing risk in Bucks County, and then identified mitigation actions to implement between plan updates to meet these goals and objectives.

Goals and Objectives

The table below includes the goals and objectives identified in the HMP.

Goals	Objectives
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.	Implement projects that protect properties, critical facilities, and infrastructure from hazards focusing on the 1% annual chance floodplain.
	Provide public outreach/education regarding strategies (e.g., flood proofing) for property owners in the 1% annual chance floodplain.
	Address identified data limitations regarding lack of detailed information about individual structures located in the 1% annual chance floodplain.
	Identify and evaluate protection for hazardous material storage in floodplain.
	Identify the most-vulnerable and critical existing structures and infrastructure due to the effects of severe weather.
	Evaluate and prioritize communities that require warning systems and storm shelters.
	Utilize available County level datasets with characteristics of individual structures for improved hazard planning and outreach.
	Identify and prioritize funding for transportation infrastructure projects that will reduce impact of hazards.
	Address the risks posed by the potential failure of High Hazard Potential Dams within the county.
	Promote disaster-resistant future development.
Encourage and facilitate the adoption of building codes that provide protection for new construction and substantial renovations from the effects of identified hazards.	
Provide adequate and consistent enforcement of ordinances and codes within and between jurisdictions.	

Table 2: Mitigation Goals and Objectives	
Goals	Objectives
	Implement hazard mitigation measures identified in other planning mechanisms and address hazard mitigation as appropriate in other planning mechanisms.
Promote hazard mitigation as a public value in recognition of its importance to the health, safety and welfare of the population.	Provide public education to increase awareness of hazards, opportunities for mitigation and to reduce the impact of disasters on all community members.
	Promote partnerships between the municipalities and the County to continue to develop a County-wide approach to identifying and implementing mitigation actions.
	Continue the promotion of disaster resistance in the business community via the hazard mitigation planning initiative.
	Consider opportunities to support employers, employees, residents, and visitors increasing remote work capabilities.
Protect natural resources within hazard areas and use them to reduce risk and losses.	Implement natural resource planning and projects that assist in hazard mitigation.

Mitigation Progress

A great deal of mitigation has been accomplished since the last HMP Update in 2016. Some highlights include:

- In 2017, the County [published their Emergency Debris Management Plan](#), which is focused on helping the county to respond to a natural or manmade debris-generating event.
- In 2019 [Yardley Borough adopted FEMA’s model SI/SD administrative procedures](#) to help the Borough implement steps to fulfill SI/SD requirements.
- The Upper Makefield Board of Supervisors is working to take steps to help residents pay less for flood insurance by working to improve the Township’s credit [points under CRS](#).
- Over the past five years Upper Southampton Township has purchased and performed [demolition to six properties in the SFHA that has experienced repetitive losses](#).
- Bucks County has recently had to focus a lot of their mitigation resources on [pandemic response](#). As the COVID-19 vaccine became available the County realized the differences between this vaccination distribution effort and previous vaccination distribution efforts and was able to pivot quickly.
- The County has [introduced a Model Alternative Energy Ordinance in January 2021](#) to assist municipalities with moving towards alternative energy to lessen reliance on traditional grid power especially for new developments.
- Since 2016 the County has been provided with [two 175kw mobile generators](#) by PEMA.

Mitigation Techniques

Each community, the County, and partner agencies were asked to submit actions intended to decrease the communities’ risk to the identified hazards. Each mitigation action was assessed and prioritized. The table below outlines they types of actions that were identified and the hazards they address.

Table 3 : Mitigation Techniques Used for All Hazards in Bucks County				
Hazard	Mitigation Technique			
	Local Plans and Regulations	Structure and Infrastructure	Natural Systems Protection	Education and Awareness
Drought	X	X		X
Earthquake	X			X
Extreme Temperature	X	X		X
Flood, Flash Flood, Ice Jam	X	X	X	X
Hailstorm	X			X
Hurricane, Tropical Storm, Nor'easter	X	X	X	X
Landslide	X			X
Lightning Strike	X			X
Pandemic and Infectious Disease	X	X		X
Radon Exposure	X			X
Subsidence, Sinkhole	X			X
Tornado, Windstorm	X			X
Wildfire	X			X
Winter Storm	X			X
Structure Collapse	X	X		X
Dam Failure	X	X		X
Environmental Hazards	X			X
Terrorism	X			X
Transportation Accident	X	X		X
Urban Fire and Explosion	X			X
Utility Interruption	X			X
Gas and Liquid Pipelines	X			