



9.10 BOROUGH OF PENNINGTON

This section presents the jurisdictional annex for the Borough of Pennington and includes resources and information to assist public and private sectors with reducing losses from future hazard events. This annex is not intended as guidance for actions to take during a disaster. Rather, this annex provides actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex includes a general overview of the municipality and who in the community participated in the planning process, an assessment of the Borough of Pennington’s risk and vulnerability, the different capabilities, and an action plan that will be implemented to achieve a more resilient community.

9.10.1 Hazard Mitigation Planning Team

The Borough of Pennington followed the planning process described in Section 2 (Planning Process) in Volume I of this plan update and developed the annex over the course of several months with input from many municipal departments as summarized in the table below. The primary and alternate points of contact represented the community on the Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The following table summarizes municipal officials that participated in the development of the annex and in what capacity, including the Borough of Pennington hazard mitigation plan primary and alternate points of contact. Additional documentation on the municipality’s planning process through Planning Partnership meetings is included in Section 2 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.10-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Eileen M. Heinzl, Borough Administrator Address: 30 Main Street Pennington, NJ 08534 Phone Number: 609-737-0276 Email: ehinzl@penningtonboro.org	Name/Title: Douglas Pinelli, Chief of Police Address: 30 Main Street Pennington, NJ 08534 Phone Number: 609-737-1679 Email: dpinelli@penningtonboro.org
NFIP Floodplain Administrator	
Name/Title: Eileen M. Heinzl, Borough Administrator Address: 30 Main Street Pennington, NJ 08534 Phone Number: 609-737-0276 Email: ehinzl@penningtonboro.org	
Additional Contributors	
Name/Title: Betty Sterling, Borough Clerk/Assistant CFO Method of Participation: Provided permit information, contributed to mitigation strategy	
Name/Title: Douglas Pinelli, Chief of Police Method of Participation: Provided information on hazard events, new development, contributed to mitigation strategy.	
Name/Title: Eileen M. Heinzl, Borough Administrator Method of Participation: Contributed to mitigation strategy	
Name/Title: Rick Smith, Superintendent of Public Works Method of Participation: Contributed to mitigation strategy	

9.10.2 Municipal Profile

The Borough of Pennington is located in northern Mercer County, within the Township of Hopewell. The Borough encompasses an area of 0.95 square miles. The Borough is fully surrounded by the Township of



Hopewell. Stony Brook forms the northeastern border of the Borough and Woolsey Brook is a waterbody found within the municipality.

According to the U.S. Census, the 2010 population for the Borough of Pennington was 2,585. The estimated 2019 population was 2,531, a 2.1 percent decrease from the 2010 Census. Data from the 2019 U.S. Census American Community Survey indicate that 4.9 percent of the population is 5 years of age or younger and 23.7 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.10.3 Jurisdictional Capability Assessment and Integration

The Borough of Pennington performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community’s adaptive capacity to withstand hazard events.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. Annex development included reviewing planning and policy documents and surveying each jurisdiction to obtain a better understanding of their progress in plan integration and how risk reduction is supported. Areas with current mitigation integration are summarized in this jurisdictional Capability Assessment (Section 9.10.3). The updated mitigation strategy includes opportunities the Borough of Pennington identified for integration of mitigation concepts to be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability

Section 5 (Capability Assessment) provides an overview of the planning, legal, and regulatory capabilities. The table below summarizes the regulatory tools that are available to the Borough of Pennington, what is present in the jurisdiction, and code citation and date.

Table 9.10-2. Planning, Legal, and Regulatory Capability

	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
Codes, Ordinances, & Regulations					
Building Code	Yes	Yes	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.); Chapter 83 Construction Codes, Uniform	State and Local	Code Enforcement
How does this reduce risk? <ul style="list-style-type: none"> • Adopts the Uniform Construction Code and establishes the Construction Code Official as the chief enforcement official. 					
Zoning/Land Use Code	Yes	Yes, if the jurisdiction has a planning board	Chapter 215, Zoning	Local	Planning and Zoning Departments
How does this reduce risk?					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<ul style="list-style-type: none"> The purpose of this chapter is to encourage the most appropriate use of land throughout the Borough so as to promote the public health, safety, morals and general welfare of the citizens of the Borough and the region and to conserve the value of property, with due consideration for the character of the zones and their peculiar suitability for particular uses; all in accordance with a Comprehensive Land Use Plan designed to lessen congestion of the streets and roads and to encourage the free flow thereof; to secure safety from fire, flood, panic and other natural and man-made disasters; to provide adequate light, air and open space; to prevent the overcrowding of land and establish appropriate population densities and concentrations and to that end to limit and restrict to specified districts and regulate therein buildings and structures according to their construction, nature and use, and the nature and use of the land and to do all other things which further the general purposes of the Municipal Land Use Law, Chapter 291. 					
Subdivision Ordinance	Yes	Yes, if the jurisdiction has a planning board	Chapter 181, Subdivision of Land	Local	Planning and Zoning Department
How does this reduce risk? <ul style="list-style-type: none"> The purpose of this chapter is to provide rules, regulations and standards to guide land subdivision in the Borough of Pennington in order to promote the public health, safety, convenience and general welfare of the municipality. It is administered to ensure the orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services. 					
Stormwater Management Ordinance	Yes	Yes	163-20.1 ET SEQ.; Chapter 163 Site Plan Review, Article IV Submission Requirements	Local	Planning Board
How does this reduce risk? <ul style="list-style-type: none"> It is the purpose of this section to establish minimum stormwater management requirements and controls for major development. 					
Post-Disaster Recovery/ Reconstruction Ordinance	No	No	-	-	-
How does this reduce risk?					
Real Estate Disclosure	Yes	Yes	N.J.A.C. 13:45A-29.1	State	State, Division of Consumer Affairs
How does this reduce risk? Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	Yes, if the jurisdiction has a planning board	-	-	-
How does this reduce risk?					
Site Plan Ordinance	Yes	Yes, if the jurisdiction has a planning board	Chapter 163, Site Plan Review	Local and County	Planning Board
How does this reduce risk? <ul style="list-style-type: none"> The purpose of this chapter is to establish rules, regulations, standards and procedures for review of all development proposals other than single- or two-family dwellings in order to: <ul style="list-style-type: none"> A. Preserve existing natural resources and give proper consideration to the physical constraints of the land. B. Provide for safe and efficient vehicular and pedestrian circulation. C. Provide for appropriate screening, landscaping, signing and lighting. D. Ensure efficient, safe and aesthetic land development. E. Provide for compliance with appropriate design standards to ensure adequate light and air, proper building arrangements and minimum adverse effect on surrounding property. F. Develop proper safeguards to minimize any adverse impact on the environment. G. Ensure the provision of adequate water supply, drainage and stormwater management, sanitary facilities and other utilities and services. H. Provide for appropriate recreation, open space and public-use areas. 					
Environmental Protection Ordinance	Yes	Yes, depends on type of environmental areas	Chapter 153 Riparian Buffer Conservation Zones; Chapter 209 Water Conservation	Local	Borough Administration
How does this reduce risk? <ul style="list-style-type: none"> Chapter 153 Riparian Buffer Conservation Zones: The specific purposes and intent of this chapter are to: <ul style="list-style-type: none"> A. Restore and maintain the chemical, physical, and biological integrity of the water resources of the Borough; B. Prevent excessive nutrients, sediment, and organic matter, as well as biocides and other pollutants, from reaching surface waters by optimizing opportunities for filtration, deposition, absorption, adsorption, plant uptake, 					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
biodegradation, and denitrification, which occur when stormwater runoff is conveyed through vegetated buffers as stable, distributed sheet flow prior to reaching receiving waters; <ul style="list-style-type: none"> ○ C. Provide for shading of the aquatic environment so as to moderate temperatures, retain more dissolved oxygen, and support a healthy assemblage of aquatic flora and fauna; ○ D. Provide for the availability of natural organic matter (fallen leaves and twigs) and large woody debris (fallen trees and limbs) that provide food and habitats for small bottom-dwelling organisms (insects, amphibians, crustaceans, and small fish), which are essential to maintain the food chain; ○ E. Increase streambank stability and maintain natural fluvial geomorphology of the stream system, thereby reducing streambank erosion and sedimentation and protecting habitats for aquatic organisms; ○ F. Maintain base flows in streams and moisture in wetlands; ○ G. Control downstream flooding; and ○ H. Conserve the natural features important to land and water resources, e.g., headwater areas, groundwater recharge zones, floodways, floodplains, springs, streams, wetlands, woodlands, and prime wildlife habitats. <ul style="list-style-type: none"> • Chapter 209 Water Conservation: Allows for the declaration of water emergencies and the prohibiting of certain water uses. 					
Flood Damage Prevention Ordinance	Yes	Yes	Chapter 108, Flood Damage Prevention	Federal, State, County and Local	Construction Official, Borough Administrator
How does this reduce risk?					
<ul style="list-style-type: none"> • It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: <ul style="list-style-type: none"> ○ A. Protect human life and health; ○ B. Minimize expenditure of public money for costly flood control projects; ○ C. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; ○ D. Minimize prolonged business interruptions; ○ E. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard; ○ F. Help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas; ○ G. Ensure that potential buyers are notified that property is in an area of special flood hazard; and ○ H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. 					
Wellhead Protection	No	No	-	-	-
How does this reduce risk?					
Emergency Management Ordinance	No	No	-	-	-
How does this reduce risk?					
Climate Change Ordinance	No	No	-	-	-
How does this reduce risk?					
Disaster Recovery Ordinance	No	No	-	-	-
How does this reduce risk?					
Disaster Reconstruction Ordinance	No	No	-	-	-
How does this reduce risk?					
Other	No	-	-	-	-
Codes, Ordinances, & Regulations Connection to Mitigation and Safe Growth					
Prior to, zoning changes, or development permitting, does the jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use? Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains? Does it contain natural overlay zones that set conditions? Does the ordinance require developers to take additional actions to mitigate natural hazard risk? Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use? Do the ordinances prohibit development within, or filling of, wetlands, floodways, and floodplains? Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas? Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas? Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
Do the regulations allow density transfers where hazard areas exist? When updating ordinances, is hazard mitigation considered?					
Planning Documents					
Master Plan	Yes	Yes – County Yes/No - municipality	1998 Master Plan, 2005 Master Plan and Reexamination, 2013 Master Plan and Periodic Reexamination, 2014 Amendment of Reexamination Report	Local	Planning Board
How does this reduce risk? <ul style="list-style-type: none"> Guides long term development and decision making in the Borough. 					
Capital Improvement Plan	Yes	Allowed	Annual Budget	Local	Borough Council
How does this reduce risk? <ul style="list-style-type: none"> Allocated annual funds and can include funding for mitigation projects. 					
Disaster Debris Management Plan	No	No	-	-	-
How does this reduce risk?					
Floodplain Management or Watershed Plan	Yes	No	A Multi-Jurisdictional Flood Mitigation Plan, 2008	Regional, Local	Administration
How does this reduce risk? <ul style="list-style-type: none"> Identified flood mitigation actions for the region. 					
Stormwater Management Plan	Yes	Yes	Part of Master Plan, 2005 and 2013 reexamination	Local	Borough Engineer, Planning Board, Council
How does this reduce risk? <ul style="list-style-type: none"> Identifies long term goals for stormwater management in the Borough. 					
Stormwater Pollution Prevention Plan	No	Yes	-	-	-
How does this reduce risk?					
Urban Water Management Plan	No	No	-	-	-
How does this reduce risk?					
Habitat Conservation Plan	No	No	-	-	-
How does this reduce risk?					
Economic Development Plan	No	No	-	-	-
How does this reduce risk?					
Shoreline Management Plan	No	No	-	-	-
How does this reduce risk?					
Community Wildfire Protection Plan	No	No	-	-	-
How does this reduce risk?					
Community Forest Management Plan	Yes	No	Community Forestry Management Plan, 2016-2021	Local	Shade Tree Commission
How does this reduce risk? <ul style="list-style-type: none"> The Borough's Shade Tree Committee maintains an inventory of Borough shade trees and performs an annual assessment for the detection and remediation of hazardous trees. 					
Transportation Plan	Yes	No	Route 546 Bikeway Planning and Development Study (with Hopewell Township and Lawrence Township)	Local, Regional, State	Public Safety and Administration, Hopewell Valley OEM
How does this reduce risk?					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
• N/A					
Agriculture Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Climate Action/ Resiliency Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Tourism Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Business/ Downtown Development Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Other	No	-	-	-	-
Planning Connection to Mitigation and Safe Growth					
<ul style="list-style-type: none"> Do the land use policies discourage development or redevelopment with natural hazard areas? Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas? Does the transportation plan limit access to hazard areas? Is transportation policy used to guide growth to safe locations? Are transportation systems designed to function under disaster conditions (e.g. evacuation)? Are environmental systems that protect development from hazards identified and mapped? Do environmental policies maintain and restore protective ecosystems? Do environmental policies provide incentives to development that is located outside protective ecosystems? 					
Response/Recovery Planning					
Emergency Operations Plan	No	Yes	-	-	-
<i>How does this reduce risk?</i>					
Strategic Recovery Planning Report	No	No	-	-	-
<i>How does this reduce risk?</i>					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	No	-	-	-
<i>How does this reduce risk?</i>					
Post-Disaster Recovery Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Continuity of Operations Plan	Yes	No	2015 Continuity of Operations/Government ("COOP/COG")	County, Local	Public Safety and Administration, Hopewell Valley OEM
<i>How does this reduce risk?</i>					
<ul style="list-style-type: none"> Puts plans in place to maintain government operations during hazard events. 					
Public Health Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Other	No	-	-	-	-
Response/Recovery Planning Connection to Mitigation and Safe Growth					
<ul style="list-style-type: none"> Does your EOP cover short-term response and long-term recovery to address communications, evacuation, and housing necessary for identified hazards? No 					

Development and Permitting Capability

The table below summarizes the capabilities of the Borough of Pennington to oversee and track development.



Table 9.10-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment
Do you issue development permits? - If yes, what department is responsible? - If no, what is your process for development?	Yes	The Department of Building and Construction is responsible for issuing, approving, and inspecting building permits.
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	SFHA
Do you have a buildable land inventory? - If yes, describe. - If no, quantitatively describe the level of buildout in the jurisdiction.		

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Borough of Pennington and their current responsibilities which contribute to hazard mitigation.

Table 9.10-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Administrative Capability		
Planning Board	Yes	The Planning Board is a combined Zoning and Planning Board.
Zoning Board of Adjustments	Yes	The Planning Board is a combined Zoning and Planning Board.
Planning Department	Yes-	The Planning and Zoning Office accepts and processes applications for site plans, subdivisions and variances for the Planning Board. The Zoning Officer reviews and approves construction projects and advises if a variance or site plan is needed.
Mitigation Planning Committee	Yes	OEM, DPW, Engineer, Administration
Environmental Board/Commission	Yes	<p>The Environmental Commission:</p> <ul style="list-style-type: none"> • Conducts research into the use and possible use of open land areas of the borough. • Prepares maps, charts, plans, pamphlets for the Borough Council and residents. • Maintains an index of all open space, publicly or privately owned, including open marshlands, swamp and other wetlands in order to obtain information on the proper use of such areas and may recommend to the Planning Board of the borough plans and programs for inclusion in a municipal Master Plan and the development and use of such areas. • Reviews preliminary site plan applications and other Planning Board applications, as requested by the Board, and submits its recommendations to the Planning Board. • Works in consultation with the Open Space Committee on open space issues. <p>The Hopewell Valley Green Team (formerly known as the Hopewell Valley Green Future Task Force) works</p>



Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
		to foster actions among citizens and governments in the Valley that will lead to a more sustainable way of living.
Open Space Board/Committee	Yes	Open Space Committee
Economic Development Commission/Committee	Yes	Economic Development Committee
Public Works/Highway Department	Yes	The Department of Public Works is responsible for maintaining the roads, parks, facilities and municipal buildings, shade trees, parks and for collecting municipal garbage and snow plowing. The Superintendent of Public Works operates the Borough's Water Utility as the Licensed Water Operator. DPW staff maintain and operate the Borough's water distribution and collection system.
Construction/Building/Code Enforcement Department	Yes	The Department of Building and Construction is responsible for issuing, approving, and inspecting building permits.
Emergency Management/Public Safety Department	Yes	Pennington Police Department
Warning Systems / Services (mass notification system, outdoor warning signals)	Yes	Swift911
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Planning, DPW, Administration
Mutual aid agreements	In Progress	Green Team, Emergency Management
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning and Zoning Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Planning and Zoning Department, Building and Construction Department
Planners or engineers with an understanding of natural hazards	Yes	Planning and Zoning
Staff with expertise or training in benefit/cost analysis	Yes	OEM AND JIF
Professionals trained in conducting damage assessments	Yes	OEM AND JIF
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Engineer
Scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Hopewell Valley Office of Emergency Management
Grant writer(s)	No	Are data and maps from the HMP used to support documentation in grant applications?
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-



Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<p>How do your administrative/technical capabilities contribute to risk reduction in your community? Staff are trained to respond to and mitigate natural hazard events.</p>		

Fiscal Capability

The table below summarizes financial resources available to the Borough of Pennington.

Table 9.10-5. Fiscal Capabilities

Financial Resources	Are these accessible or eligible to use for mitigation? (Yes/No) If yes, please describe. If no, can this be used to support in the future?
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	N/A
Withhold public expenditures in hazard-prone areas	No
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No
Fiscal Connection to Mitigation and Safe Growth	
<p>How do your fiscal capabilities contribute to risk reduction in your community? Budget is allocated to support mitigation actions where possible.</p> <p>When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals.</p> <p>Annually, the jurisdiction will review mitigation actions when allocating funding.</p> <p>Do budgets limit expenditures on projects that would encourage development in areas vulnerable to natural hazards? PLACEHOLDER</p> <p>Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards? PLACEHOLDER</p> <p>Do budgets provide funding for hazard mitigation projects identified in the County HMP? Yes, where possible.</p>	

Education and Outreach Capability

The table below summarizes the education and outreach resources available to the Borough of Pennington.





Table 9.10-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events? If yes, please describe.
Public information officer or communications office		
Personnel skilled or trained in website development		
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Environmental Commission, Open Space Committee, Hopewell Valley Green Team
Other programs already in place that could be used to communicate hazard-related information		
Warning systems for hazard events	Yes	Swift911
Natural disaster/safety programs in place for schools		
Other		

Community Classifications

The table below summarizes classifications for community programs available to the Borough of Pennington.

Table 9.10-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	???	???
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	October 1, 2015
Sustainable Jersey	Yes	Bronze	October 23, 2019
StormReady Certification	No	-	-
Firewise Communities classification	No	-	-

Note:

- N/A Not applicable
- NP Not participating
- Unavailable

The Borough of Pennington is a bronze certified community. The following hazard mitigation related actions were submitted for credit in the program:

- *Environmental Commission:* The Environmental Commission the Pennington Borough Environmental Commission has been involved in the Site Plan Review process for many years. Written procedures were adopted by the Environmental Commission on July 18, 2016. The Commission has submitted comments to the Planning/Zoning Board regarding impervious coverage and green measures to reduce stormwater run-off.



- *Open Space Planning:* The Open Space Plan is consistent with the goals and objectives of the Borough's 1998 Master Plan and meets the requirements of the State Green Acres Program. The Borough is an active steward of open space and has worked in partnership with neighboring municipalities to purchase and preserve open space. Most recently, the Borough purchased property in Hopewell Township with Green Acres and Mercer County Open Space funding. In 2015, the Borough partnered resources to preserve acres on Carter Road in Hopewell Township. The Borough maintains a Roster of Open Space Inventory.
- *Community Forestry Management Plan:* Pennington Borough has a very active Shade Tree Committee and is recognized as a long standing "Tree City USA" Community. The Borough submitted a 5-year Community Forestry Management Plan in 2016. Tree Maintenance and Removals is among the priority goals of the Borough CFMP. Borough trees are maintained throughout the year by members of the Pennington Shade Tree Committee and the Department of Public Works. The Statement of Tree Budget allocates \$10,900.00 for volunteer and staff work connected with shade tree maintenance. The Assistant Foreman in the department is a Certified Municipal Arborist. The chair of the Shade Tree Committee is a NJ Certified Tree Expert. They work together throughout the year to assess Borough trees and, with the assistance of the Superintendent of Public Works, develop a plan to prune or remove shade trees in the public rights of way and in the two municipal parks.
- *Tree Hazard Inventor:* The Borough Shade Tree Committee, working with the Department of Public Works has developed an inventory of hazardous municipal shade trees. This inventory has been instrumental in the Borough's program to remove 28 hazardous trees in 2017. The Borough's Tree Hazard Inventory is updated annually and includes data on the species, common tree pest and disease problems, structural defects as well as an overall ranking of the tree hazards recorded.

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). In other words, it describes a jurisdiction’s current capabilities to adjust to, protect from, or withstand a future hazard event, future conditions, and changing risk. The table below summarizes the adaptive capacity for each hazard of concern and the jurisdiction’s rating.

Table 9.10-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak*
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Flood	Moderate
Geological Hazards	Moderate
Hazmat	Moderate
Hurricane	Moderate
Infestation and Invasive Species	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Wildfire	Moderate



*Strong = Capacity exists and is in use, Moderate = Capacity may exist; but is not used or could use some improvement, Weak = Capacity does not exist or could use substantial improvement.

9.10.4 National Flood Insurance Program (NFIP) Compliance

The table below provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the NFIP.

Table 9.10-9. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
<ul style="list-style-type: none"> # NFIP Policies: 4 # RL properties: 1 # SRL properties: 0 # RL/SRL mitigated: 0 	<ul style="list-style-type: none"> # claims filed: 0 Total loss payments: \$0
Describe areas prone to flooding in your jurisdiction.	Intersection of West Delaware and Route 31
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation, and if so, how many are interested in (elevation or acquisition)?	No
How do you make Substantial Damage determinations? <ul style="list-style-type: none"> How many were declared for recent flood events in your jurisdiction? 	On site evaluation for damage determinations. None declared for recent flood events.
Detail any RiskMAP projects currently underway in your jurisdiction.	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	N/A. The FPA is not aware of any floodplains in the Borough.
NFIP Administration	
What local department is responsible for floodplain management?	Borough administrator
Are any staff certified floodplain managers (CFMs) or is a consultant retained?	No
Provide an explanation of who in your municipality provides NFIP administration services (permit review, GIS, education/outreach, inspections, engineering capability).	Construction Official is the consultant engineer.
What specific training or support does your floodplain management staff need to support its floodplain management program?	None.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Refer to stormwater design ordinance
Do you have access to resources to determine possible future flooding conditions from climate change?	No
NFIP Compliance	
List any outstanding NFIP compliance violations.	None
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	April 18, 1994
What is the local law number or municipal code of your flood damage prevention ordinance? What is the date that your flood damage prevention ordinance was last amended?	Chapter 108 of the Borough Code Ordinance 2016-14 – July 11, 2016
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets. However, the flood damage prevention ordinance requires update to meet new model language recommendations from NJ DEP.



NFIP Topic	Comments
Are there other local ordinances, plans, or programs (site plan review, consideration of flood risk reduction when granting height variances) that support floodplain management and meeting the NFIP requirements?	No.
Does your jurisdiction participate in CRS? <ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	No.

Source: FEMA Region 2 2019

Notes:

RL—Repetitive Loss; SRL—Severe Repetitive Loss; NA—Not applicable

9.10.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to understanding a jurisdiction’s overall risk to its hazards of concern. The table below summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.

Table 9.10-10. Recent and Expected Future Development

Type of Development	2016		2017		2018		2019		2020		2021	
Number of Building Permits for New Construction Issued Since the Previous HMP* (within regulatory floodplain/ outside regulatory floodplain)												
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single Family	11	0	12	0	34	0	14	0	29	0	1	0
Multi-Family	0	0	9	0	8	0	0	0	1	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	1	0	1	0	0	0	0	0
Total Permits Issued	11	0	21	0	43	0	15	0	30	0	0	0
Property or Development Name	Type of Development	# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development				
Recent Major Development and Infrastructure from 2015 to Present												
Heritage at Pennington	Residential	???		West Franklin Avenue		None Identified		Complete				
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years												
None Anticipated												

SFHA Special Flood Hazard Area (1% annual chance flood event)

* Only location-specific hazard zones or vulnerabilities identified.

9.10.6 Jurisdictional Risk Assessment

The hazard profiles in Section 4 (Risk Assessment) provide detailed information regarding each plan participant’s vulnerability to the identified hazards. Section 4.2 (Methodology and Tools), Section 4.3 (Hazards of Concern), and Section 4.4 (Hazard Ranking) provide a detailed summary for the Borough of Pennington’s risk assessment results, and data used to determine the hazard ranking are discussed later in this section.



Hazard area extent and location maps provided below illustrate the probable areas impacted within the jurisdiction. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps were only generated for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Pennington has significant exposure. The maps also show the location of potential new development, where available.

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Figure 9.10-1. Borough of Pennington Hazard Area Extent and Location Map 1

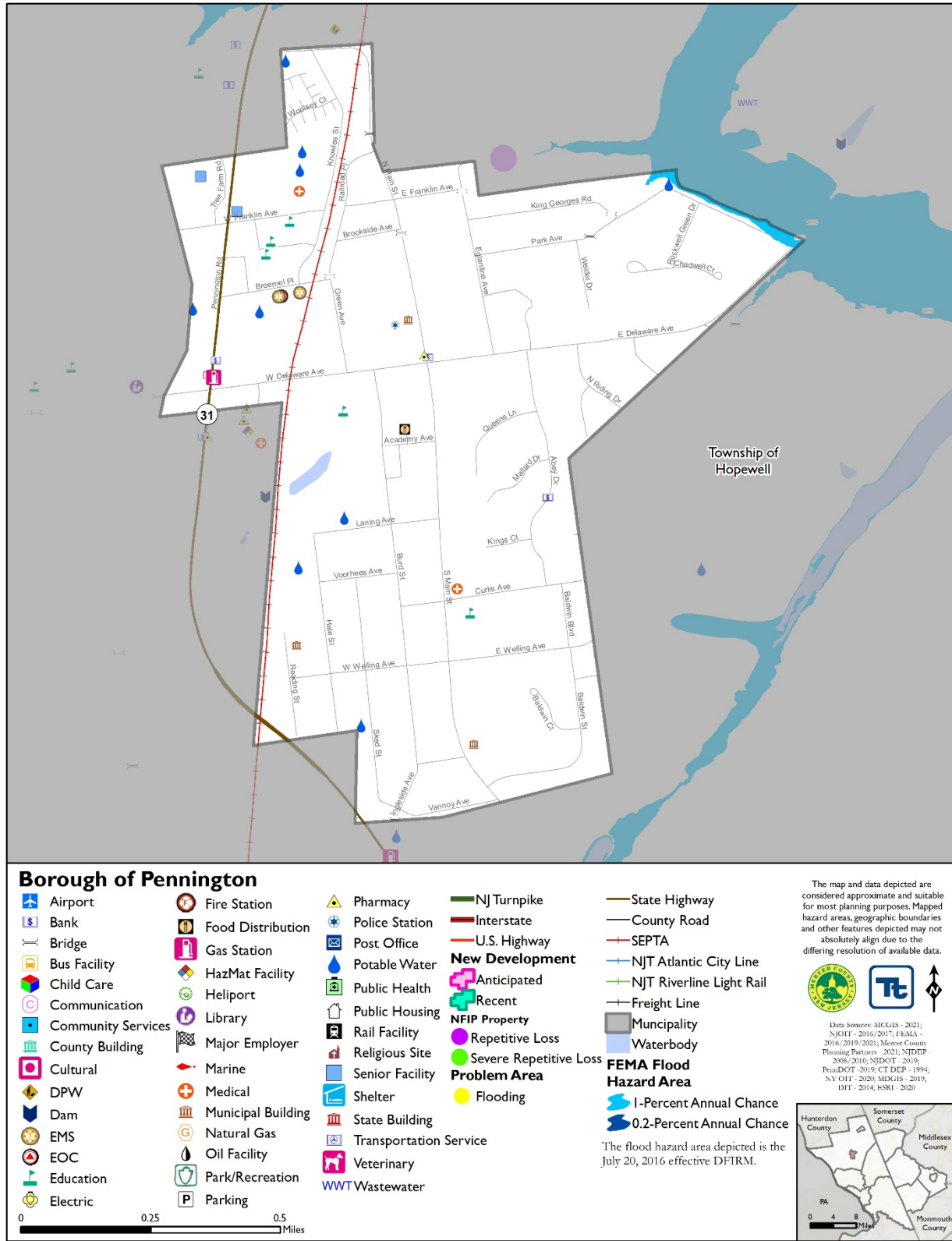




Figure 9.10-2. Borough of Pennington Hazard Area Extent and Location Map 2

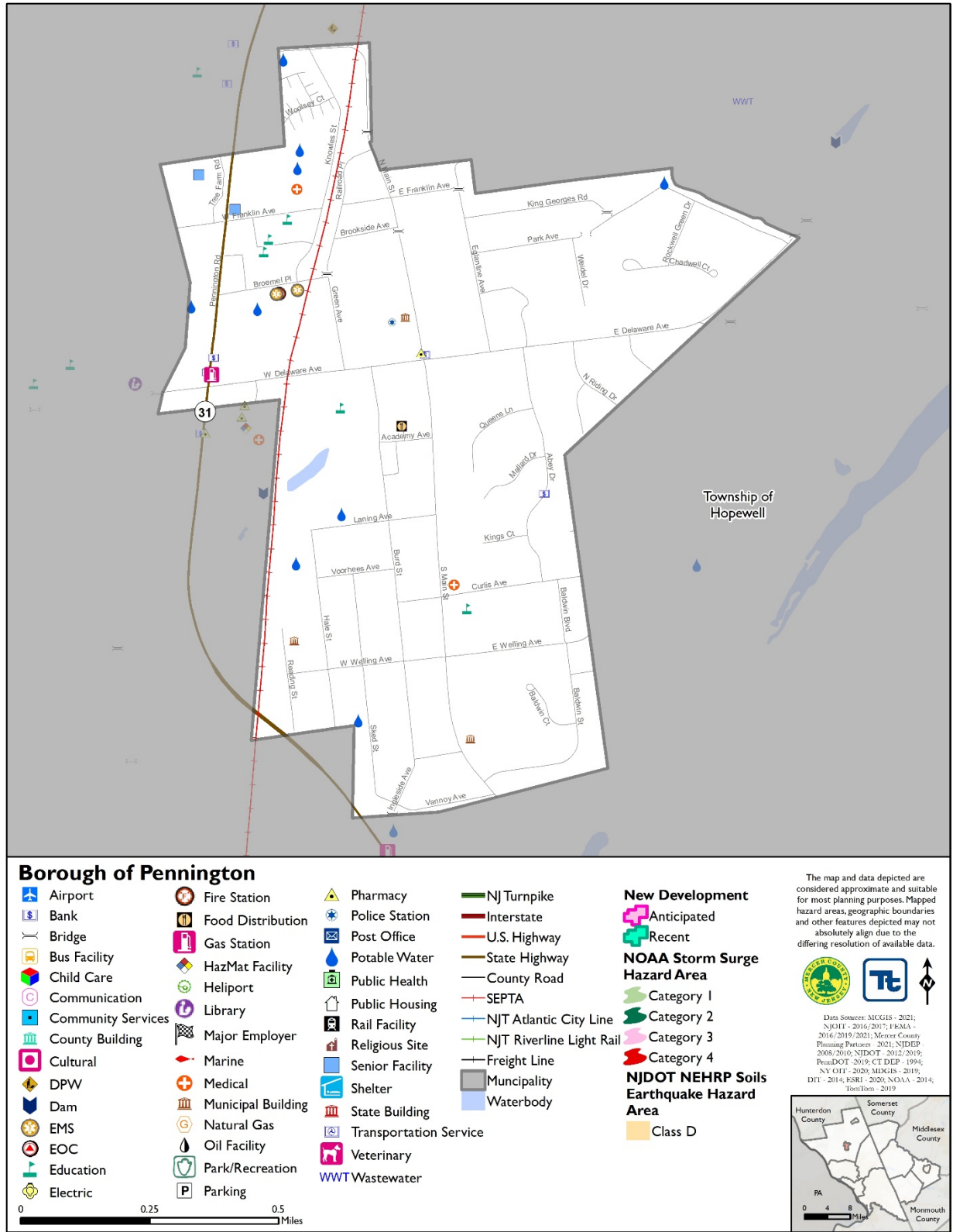




Figure 9.10-3. Borough of Pennington Hazard Area Extent and Location Map 3

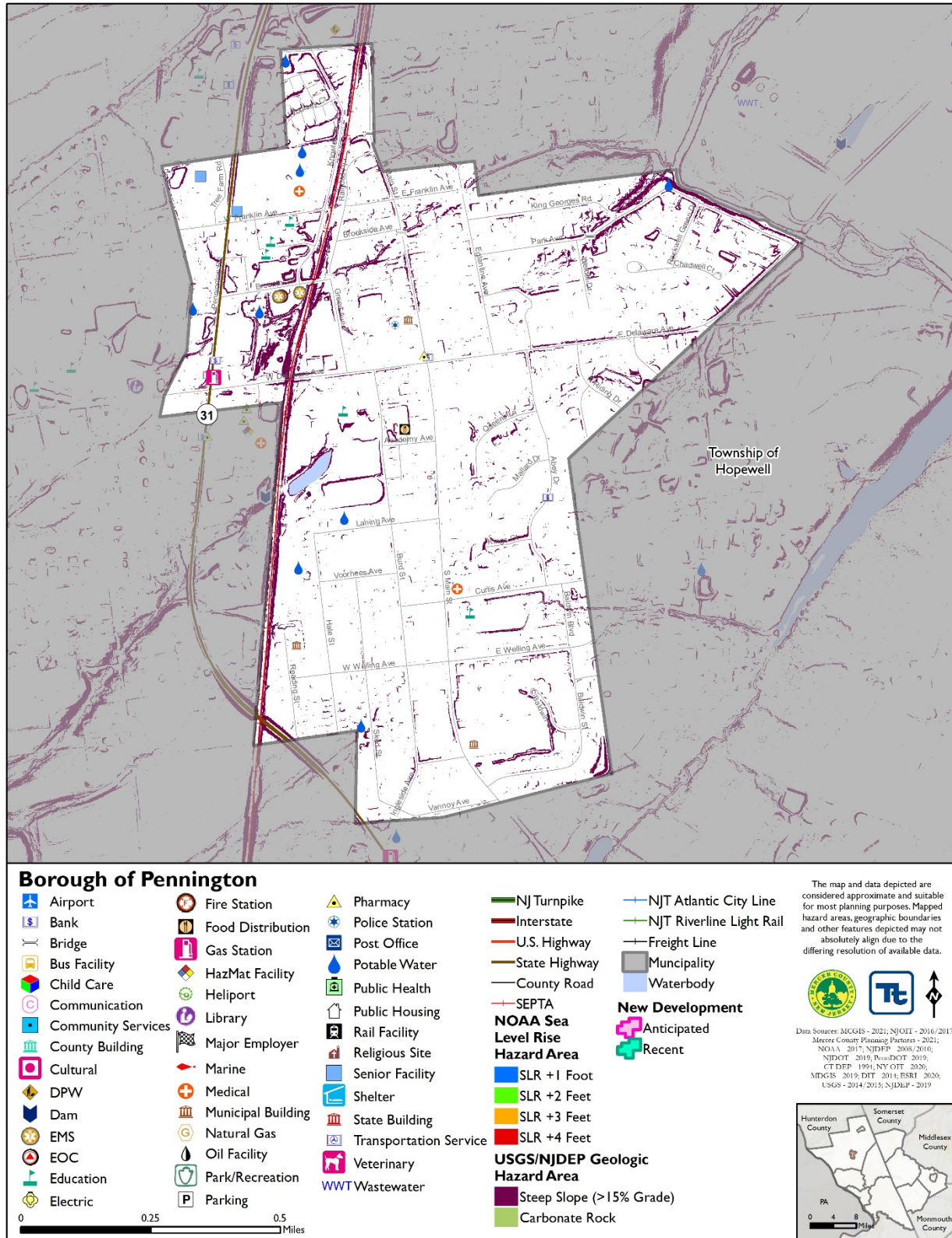
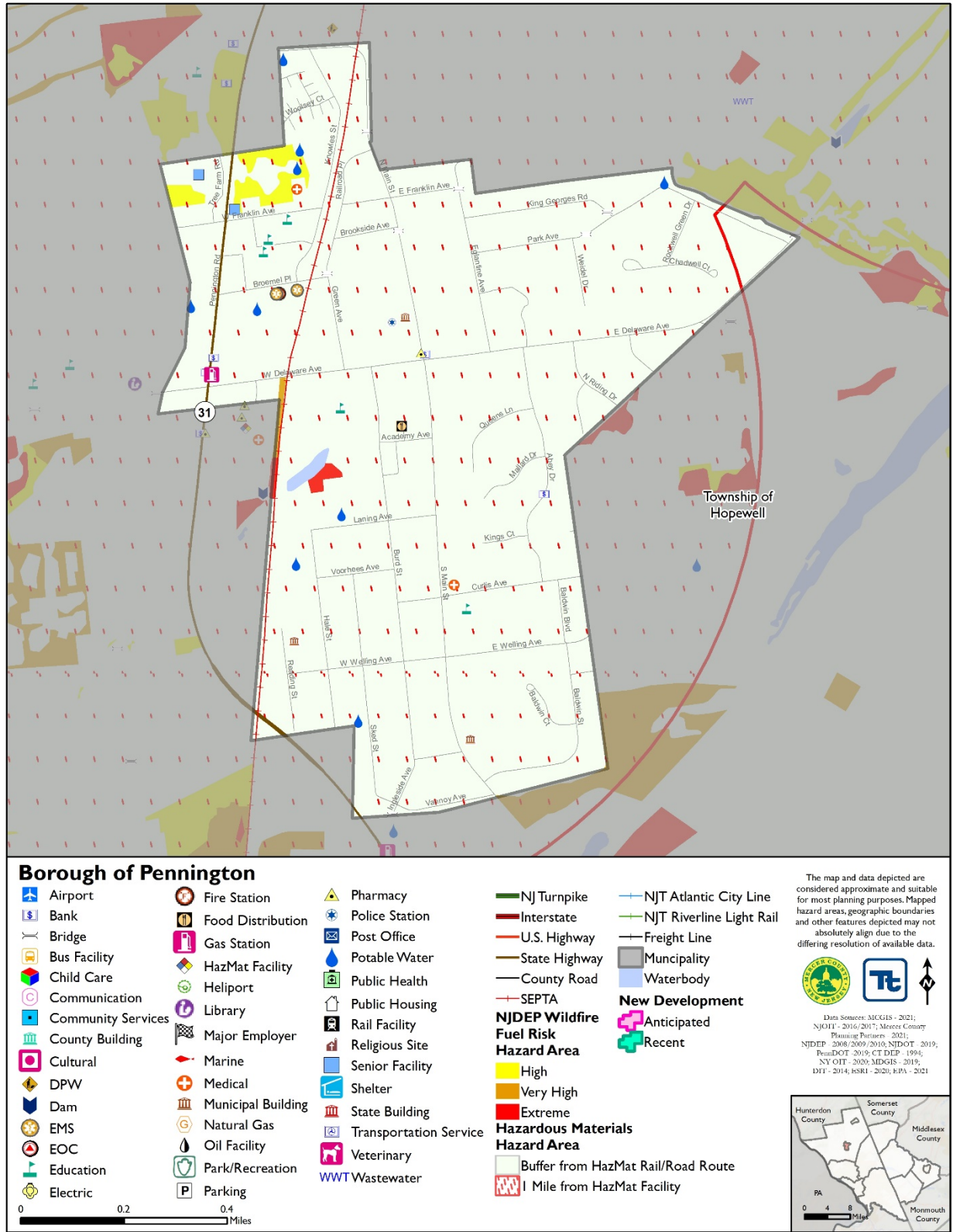




Figure 9.10-4. Borough of Pennington Hazard Area Extent and Location Map 4





Hazard Event History

Mercer County has a history of natural hazard events as detailed in Section 4 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the county and its municipalities.

The Borough of Pennington’s history of federal declarations (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Mercer County. The table below provides details regarding municipal-specific loss and damages the County experienced during hazard events since the last hazard mitigation plan update. Information provided in the table below is based on reference material or local sources.

Table 9.10-11. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
February 13-14, 2015	Cold/Wind Chill	No	The center of an arctic air mass brought some of the lowest wind chills and temperatures of the winter season to New Jersey. Wind chill factors were recorded as low as 22 degrees below zero, with actual temperatures reaching - 2°F.	Many local governments across the area set up Code Blue shelters for the vulnerable population. Although the County was impacted, the Borough did not report impacts.
January 22 – 24, 2016	Blizzard (DR-4264-NJ)	Yes	A low-pressure system moved up along the Carolina Coast intensifying into a major nor’easter, producing record snowfall in New Jersey on January 23. Wind gusts reached upwards of 60 mph and visibility was one-quarter mile or less throughout the region. Damages across the state were estimated at \$82.6 million.	Up to 24 inches of snow was reported in Mercer County. Although the County was impacted, the Borough did not report impacts.
March 7, 2018	Winter Storm	No	A low pressure system moved northeast across Delaware and New Jersey bringing a wintry snow/rain mix overnight on March 6. Across the state, snowfall totals ranged from 6 to 24 inches. Heavy, wet snow downed trees and limbs leaving 350,000 customers state-wide without power.	Up to 11.5 inches of snowfall was reported in Mercer County. Although the County was impacted, the Borough did not report impacts.
August 4, 2020	Tropical Storm	N/A	Tropical Storm Isaias brought high winds, heavy rain, several tornadoes, and coastal flooding to the mid-Atlantic region, becoming the most impactful tropical cyclone to impact most of the region since Sandy in 2012.	Although the County was impacted, the Borough did not report impacts.
January 20, 2020 – Present	Covid-19 Pandemic (EM-3451-NJ) (DR-4488-NJ)	Yes	Beginning on January 20, 2020, the pandemic resulting from the Coronavirus Disease (COVID-19) created conditions of sufficient severity and magnitude to warrant a disaster declaration in the State of New Jersey.	The coronavirus pandemic resulted in closures and masking and social distancing requirements.
Jan. 31 to Feb 2, 2021	Winter Storm	No	A Low-pressure system moved northeast across Delaware and New Jersey bringing winter snow across the state. Snowfall totals ranged from 0.5 to 32 inches.	Up to 14.4 inches of snow was reported in Mercer County. The Borough offices were closed for two days.



Hazard Ranking and Vulnerabilities

The hazard profiles in Section 4.3 (Hazards of Concern) of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the Borough of Pennington’s risk assessment results and data used to determine the hazard ranking.

Hazard Ranking

This section provides the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 4 (Risk Assessment) of the plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy as well as community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.4 (Hazard Ranking), each participating jurisdiction can have differing degrees of risk exposure and vulnerability compared with Mercer County as a whole. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Borough of Pennington. The Borough of Pennington reviewed the community’s hazard risk/vulnerability risk ranking table, including municipal-specific results, to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard/vulnerability risk ranking, the Borough of Pennington indicated the following:

- The Borough agreed with the calculated hazard rankings.

Table 9.10-12. Hazard Ranking Input

Dam Failure	Disease Outbreak	Drought	Earthquake	Flood	Geological Hazards	Hazardous Materials
Low	High	Medium	Low	Medium	Low	High
Hurricane/ Tropical Storm	Infestation and Invasive Species	Nor’Easter	Severe Weather	Severe Winter Weather	Wildfire	
High	High	Medium	High	High	Low	

Note: The scale is based on the hazard rankings established in Section 4.4 (Hazard Ranking) and modified as appropriate during review by the jurisdiction.

Critical Facilities

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain and presents Hazus estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 9.10-13. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage
None identified					

Source: Mercer County 2021, FEMA 2016



Identified Issues

After review of the Borough of Pennington’s hazard event history, hazard rankings, jurisdiction specific vulnerabilities, hazard area extent and location, and current capabilities, the Borough of Pennington has identified the following vulnerabilities within their community:

- Route 31 and Delaware Avenue as well as Abey Drive have experienced flooding during heavy rainfall. Flooding may be a result of jamming on Stony Brook, undersized stormwater components, daylighting, etc. These areas require a better understanding of the cause of flooding prior to mitigation.
- Backup power sources are necessary to maintain critical services for critical facilities. Well 7 is the second highest generating well in the Borough. The Well lacks a backup power source.
- The EMS facility on Broemel Place floods during heavy rain events and is an essential facility to the Borough. Flooding limits the ability of the facility to provide critical services. The facility also lacks backup power. The EMS facility is not Borough owned.
- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has one repetitive loss property but other properties may be impacted by flooding as well.
- Additional public educations is needed to increase the Borough’s ability to inform the public on hazards events and options for personal mitigation.
- The Borough lacks an adopted Disaster Debris Management Plan.
- The current flood damage prevention ordinance does not meet the state’s recommendation for a code-coordinated flood damage prevention ordinance.
- Ongoing natural weather hazards warrant the need for additional integration to allow for better emergency preparedness.
- Backup power sources are necessary to maintain critical services for critical facilities. The Senior Center on Reading Avenue lacks a backup power source. The Senior Center is used as a warming and cooling center. The facility can also be used as backup emergency shelter.
- The Borough’s Pin Oak trees have been impacted heavily by Bacterial Leaf Scorch (BLS). This has resulted in many stands of dead or dying trees, presenting a risk of falling branches and trees on infrastructure and private property. In a worst-case scenario, falling trees may result in injuries or death. Public Works has removed many trees but estimates there are 50-60 very large pin oaks remain that are outside of the Department’s capabilities due to their size.
- The Borough maintains a municipal water utility. The water service could be threatened by failure of the wells, reducing water available for consumption and firefighting.
- Inflow and infiltration issues result in higher rates of wastewater during heavy precipitation and flooding events.

9.10.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and their prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the Borough of Pennington’s mitigation strategy identified in the 2016 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and are discussed in the ‘Capability Assessment’ presented previously in this annex.



Table 9.10-14. Status of Previous Mitigation Actions

2017 Action Number and Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP?	
				Check if Yes	Enter 2021 HMP Action #
Pennington-1 (new)	Create a line item in the municipal/operating budget for mitigation project funding.	Borough	No Progress	-	-
Pennington-2 (new)	Incorporate hazard mitigation into employee job descriptions, where applicable.	Borough	In Progress. Ongoing natural weather hazards warrant the need for additional integration to allow for better emergency preparedness. Public Works, Emergency Services, Administration	X	2021-Borough of Pennington-006
Pennington-3 (new)	Create a community resilience committee and appoint an advisor.	Borough	No Progress	-	-
Pennington-4 (new)	The Borough will work closely with the local school district and assist with community service projects for the service organizations.	Borough	Ongoing Capability. Emergency Services continues to complete this work in the interest of public safety.	-	-
Pennington-5 (old Pennington Borough 3)	Pursue funding to purchase and install backup generator for the Borough's municipal building.	Borough	Complete	-	-
Pennington-6 (old Pennington Borough 4)	Conduct a study to identify mitigation options for the EMS facility on Broemel Place. This facility floods during heavy rain events and is an essential facility to the Borough.	EMS, Borough	In Progress. There are historic flood losses that need to be addressed. Office of Emergency Management to take lead.	X	2021-Borough of Pennington-001
Pennington-7 (old Pennington Borough 6)	Develop "All Hazards" public education and outreach program for hazard mitigation and preparedness.	OEM, Borough	In Progress. Needed to increase the ability to inform the public. OEM and Borough Administration to lead.	X	2021-Borough of Pennington-003
Pennington-8 (new)	Develop mitigation program for diseased and failing Borough Shade trees.	Borough Council, DPW	Ongoing Capability to address diseased trees by the Borough Council, DPW, and Shade Tree Commission.	-	-
Pennington-9 (new)	Emergency battery backup for 2 traffic signals located in Borough	Borough, DPW	Complete. There are two signals that are not locally managed (state road and county road)	-	-
Pennington-10 (new)	Purchase and install a generator at a critical facility in the Borough.	Borough	Complete	-	-





Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Borough of Pennington has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2017 HMP:

- None identified.

Proposed Hazard Mitigation Initiatives for the HMP Update

The Borough of Pennington participated in a mitigation action workshop in June 2021 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

The table below indicates the range of proposed mitigation action categories.

Table 9.10-15. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA						CRS			
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	X			X			X			X
Disease Outbreak	X			X			X			X
Drought	X	X		X			X			X
Earthquake	X			X			X			X
Flood	X	X		X	X	X	X		X	X
Geological Hazards	X			X			X			X
Hazmat	X			X			X			X
Hurricane	X	X	X	X			X	X		X
Infestation and Invasive Species	X		X	X			X	X		X
Nor’Easter	X	X	X	X			X	X		X
Severe Weather	X	X	X	X		X	X	X	X	X
Severe Winter Weather	X	X	X	X			X	X		X
Wildfire	X			X			X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

The table below summarizes the comprehensive range of specific mitigation initiatives the Borough of Pennington would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.10-17 provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.



Table 9.10-16. Proposed Hazard Mitigation Initiatives and Associated Priority

Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2021-Borough of Pennington -001	Stormwater Management Upgrades	<p>Problem: Route 31 and Delaware Avenue as well as Abey Drive have experienced flooding during heavy rainfall. Flooding may be a result of jamming on Stony Brook, undersized stormwater components, daylighting, etc. These areas require a better understanding of the cause of flooding prior to mitigation.</p> <p>Solution: The Borough will complete a hydraulic study of Stony Brook to determine the cause of flooding. Following completion, the Borough will conduct an engineering study to determine improvements that can be made to the stormwater system. Cost effective mitigation actions will then be implemented.</p>	Existing	Flood, Severe Weather	1, 2	Engineer, DPW	HMGP, BRIC, municipal budget	Reduction in flood risk, stormwater flood damage, maintains emergency access	TBD by developed actions. Anticipated High.	Within 5 years	High	LPR, SIP	SP
2021-Borough of Pennington -002	Backup Power for Well 7	<p>Problem: Backup power sources are necessary to maintain critical services for critical facilities. Well 7 is the second highest generating well in the Borough. The Well lacks a backup power source.</p> <p>Solution: The Engineer will research what size generator is needed to power the Well 7. The Borough will then purchase and install the selected generator and necessary electrical components to supply backup power to Well 7.</p>	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter, Drought	1, 2, 6	Engineer, DPW	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of Well 7	\$75,000	Within 5 years	High	SIP	ES





Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2021-Borough of Pennington -003	EMS Flood Protection and Backup Power	<p>Problem: The EMS facility on Broemel Place floods during heavy rain events and is an essential facility to the Borough. Flooding limits the ability of the facility to provide critical services. The facility also lacks backup power. The EMS facility is not Borough owned.</p> <p>Solution: The Borough will assist EMS with applications for grant funding opportunities for flood protection of the facility and backup power.</p>	Existing	Flood, Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 2, 6	OEM, EMS, Engineer	Municipal budget for outreach.	Protection of critical services, reduction in flood damages	TBD by feasibility assessment	1 year	High	EAP	PI
2021-Borough of Pennington -004	Repetitive Loss Mitigation	<p>Problem: Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 1 repetitive loss property but other properties may be impacted by flooding as well.</p> <p>Solution: Conduct outreach to 5 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1, 2	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$500,000	3 years	High	SIP	PP





Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2021-Borough of Pennington -005	All Hazards Public Education and Outreach	Problem: Additional public educations is needed to increase the Borough's ability to inform the public on hazards events and options for personal mitigation. Solution: Develop "All Hazards" public education and outreach program for hazard mitigation and preparedness.	N/A	All Hazards	3	OEM, Borough Administration	Municipal budget	Increased awareness, reduced need for municipal response	Low	2 years	High	EAP	PI
2021-Borough of Pennington -006	Disaster Debris Management Plan	Problem: The Borough lacks an adopted Disaster Debris Management Plan. Solution: The Borough will complete and adopt the in-progress Disaster Debris Management Plan.	Existing	All Hazards	5	Public Works, OEM	Borough budget	Increased planning for post-disaster response and cleanup.	Staff time	6 months	High	LPR	ES
2021-Borough of Pennington -007	Flood Damage Prevention Ordinance Update	Problem: The current flood damage prevention ordinance does not meet the state's recommendation for a code-coordinated flood damage prevention ordinance. Solution: The Borough will update the flood damage prevention ordinance using the NJ DEP's model code coordinated ordinance to create better coordination between NFIP implementation by the floodplain administrator, the New Jersey Flood Hazard Area Control Act (FHACA) implemented at the State level by the NJDEP, and the Uniform Construction Code (UCC) implemented by the Construction Official.	New	Flood	2	Floodplain Administrator, Administration	Borough budget	Meet state and FEMA standards for flood damage prevention, reduce flood risk on new development	Staff time	6 months	Medium	LPR	PR





Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2021-Borough of Pennington -008	Increase Staff Hazard Training and Responsibilities	Problem: Ongoing natural weather hazards warrant the need for additional integration to allow for better emergency preparedness. Solution: The Borough will offer trainings and incorporate hazard mitigation into employee job descriptions, where applicable.	N/A	All Hazards	5	Public Works, Emergency Services, Administration	Municipal budget	Increased staff capabilities to mitigate and respond to hazard events	Low	2 years	High	LPR	PR
2021-Borough of Pennington -009	Backup Power for Senior Center	Problem: Backup power sources are necessary to maintain critical services for critical facilities. The Senior Center on Reading Avenue lacks a backup power source. The Senior Center is used as a warming and cooling center. The facility can also be used as backup emergency shelter. Solution: The Engineer will research what size generator is needed to power the Senior Center. The Borough will then purchase and install the selected generator and necessary electrical components to supply backup power to the Senior Center. Public Works will be responsible for maintenance of the generator once installed.	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 2, 6	Engineer, Public Works	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of Senior Center	\$75,000	Within 5 years	High	SIP	ES
2021-Borough of Pennington -010	Hazardous Tree Removal	Problem: The Borough's Pin Oak trees have been impacted heavily by Bacterial Leaf Scorch (BLS). This has resulted in many stands of dead or dying trees, presenting a risk of falling branches and trees on infrastructure and private property. In a worst-case scenario, falling trees may result in injuries or death. Public Works has removed many trees but estimates there are 50-60	N/A	Hurricane, Nor'Easter, Severe Weather, Severe Winter Weather, Infestation and Invasive Species	1, 2	Public Works	HMGP, BRIC, Borough budget	Reduction in damages from falling trees	High	2 years	High	NSP	NR





Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
		<p>very large pin oaks remain that are outside of the Department’s capabilities due to their size.</p> <p>Solution: The Borough will explore options for the trimming and removal of high hazard trees that have been damaged or killed by disease. The first phase of the project will involve the survey of trees in the Borough to determine which trees have been impacted by disease or invasive species. The Borough will then work to remove trees by partnering with outside agencies such as utility providers and/or hiring contractors to remove the high hazard trees.</p>											
2021-Borough of Pennington -011	Backup Water Supply	<p>Problem: The Borough maintains a municipal water utility. The water service could be threatened by failure of the wells, reducing water available for consumption and firefighting.</p> <p>Solution: The Borough will explore options to protect the water supply. Potential methods include a tie-in to a neighboring municipality’s water system of building a secondary water tower. If a cost-effective measure is identified, the Borough will move to implementation.</p>	Existing	Wildfire, Drought	1, 2, 6	Administration, DPW	Borough budget	Continuity of water service maintained	High	Within 5 years	High	LPR	ES
2021-Borough of Pennington -012	Reduce Inflow and Infiltration	<p>Problem: Inflow and infiltration issues result in higher rates of wastewater during heavy precipitation and flooding events.</p> <p>Solution: The Borough will work to address stormwater infiltration near</p>	Existing	Flood, Severe Weather	2	DPW	Borough budget	Reduction of I & I	Medium	Within 5 years	High	SIP	SP





Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
		the Wastewater Pump Station on Curlis Avenue.											

Notes:

Not all acronyms and abbreviations defined below are included in the table.

Acronyms and Abbreviations:

- CAV Community Assistance Visit
- CRS Community Rating System
- DPW Department of Public Works
- EHP Environmental Planning and Historic Preservation
- FEMA Federal Emergency Management Agency
- FPA Floodplain Administrator
- HMA Hazard Mitigation Assistance
- N/A Not applicable
- NFIP National Flood Insurance Program
- OEM Office of Emergency Management

Potential FEMA HMA Funding Sources:

- FMA Flood Mitigation Assistance Grant Program
- HMGP Hazard Mitigation Grant Program
- BRIC Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.





- *Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.*
- *Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*

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Table 9.10-17. Summary Evaluation and Action Priority

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-Borough of Pennington-001	Stormwater Management Upgrades	1	1	0	1	1	1	0	1	1	0	1	0	1	1	10	High
2021-Borough of Pennington-002	Backup Power for Well 7	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Borough of Pennington-003	EMS Flood Protection and Backup Power	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2021-Borough of Pennington-004	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	1	1	0	1	1	10	High
2021-Borough of Pennington-005	All Hazards Public Education and Outreach	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Borough of Pennington-006	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-Borough of Pennington-007	Flood Damage Prevention Ordinance Update	0	1	1	1	1	1	1	1	1	1	0	1	1	1	12	High
2021-Borough of Pennington-008	Increase Staff Hazard Training and Responsibilities	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Borough of Pennington-009	Backup Power for Senior Center	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Borough of Pennington-010	Hazardous Tree Removal	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-Borough of Pennington-011	Backup Water Supply	1	0	1	0	1	1	1	1	1	1	1	0	1	1	11	High
2021-Borough of Pennington-012	Reduce Inflow and Infiltration	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High

Note: Section 6 (Mitigation Strategy), which conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).

This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.





9.10.8 Action Worksheets

The following action worksheets have been developed by the Borough of Pennington to aid in the submittal of grant applications to support the funding of high priority proposed actions. The State of New Jersey requires at least two projects be developed with action worksheets.

DRAFT



Action Worksheet			
Project Name:	Stormwater Management Upgrades		
Project Number:	2021-Borough of Pennington-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Route 31 and Delaware Avenue as well as Abey Drive have experienced flooding during heavy rainfall. Flooding may be a result of jamming on Stony Brook, undersized stormwater components, daylighting, etc. These areas require a better understanding of the cause of flooding prior to mitigation.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will complete a hydraulic study of Stony Brook to determine the cause of flooding. Following completion, the Borough will conduct an engineering study to determine improvements that can be made to the stormwater system. Cost effective mitigation actions will then be implemented.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by developed actions	Estimated Benefits (losses avoided):	Reduction in flood risk, stormwater flood damage, maintains emergency access
Useful Life:	30 years	Goals Met:	1, 2
Estimated Cost:	TBD by developed actions. Anticipated High.	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, BRIC, municipal budget
Responsible Organization:	Engineer, DPW	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	Very High	Costly and would not solve roadway flooding
	Buyout homes	Very High	Costly and would not solve roadway flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Stormwater Management Upgrades	
Project Number:	2021-Borough of Pennington-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects life from flooding and maintains emergency access.
Property Protection	1	Protects buildings from flood damage
Cost-Effectiveness	0	
Technical	1	Technically feasible project
Political	1	
Legal	1	The Borough has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	Project would reduce flooding impacts
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	Within 5 years
Agency Champion	1	Engineer, DPW
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-Borough of Pennington-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 1 repetitive loss property but other properties may be impacted by flooding as well.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 5 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard <i>(in accordance with flood ordinance)</i>	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1, 2
Estimated Cost:	\$500,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-Borough of Pennington-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Borough has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Borough.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power for Senior Center		
Project Number:	2021-Borough of Pennington-009		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. The Senior Center on Reading Avenue lacks a backup power source. The Senior Center is used as a warming and cooling center. The facility can also be used as backup emergency shelter.		
Action or Project Intended for Implementation			
Description of the Solution:	The Engineer will research what size generator is needed to power the Senior Center. The Borough will then purchase and install the selected generator and necessary electrical components to supply backup power to the Senior Center. Public Works will be responsible for maintenance of the generator once installed.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of Senior Center
Useful Life:	20 years	Goals Met:	1, 2, 6
Estimated Cost:	\$75,000	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power for Senior Center	
Project Number:	2021-Borough of Pennington-009	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of the Senior Center
Property Protection	1	Project will protect building from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter, Drought
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Hazardous Tree Removal		
Project Number:	2021-Borough of Pennington-010		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane, Nor'Easter, Severe Weather, Severe Winter Weather, Infestation and Invasive Species		
Description of the Problem:	The Borough's Pin Oak trees have been impacted heavily by Bacterial Leaf Scorch (BLS). This has resulted in many stands of dead or dying trees, presenting a risk of falling branches and trees on infrastructure and private property. In a worst-case scenario, falling trees may result in injuries or death. Public Works has removed many trees but estimates there are 50-60 very large pin oaks remain that are outside of the Department's capabilities due to their size.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will explore options for the trimming and removal of high hazard trees that have been damaged or killed by disease. The first phase of the project will involve the survey of trees in the Borough to determine which trees have been impacted by disease or invasive species. The Borough will then work to remove trees by partnering with outside agencies such as utility providers and/or hiring contractors to remove the high hazard trees.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduction in damages from falling trees
Useful Life:	1 year	Goals Met:	1, 2
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Ask residents to alert Borough to dangerous trees.	\$1,000	Reactive. Likely to miss most trees.
	Remove all trees along areas with powerlines and property	N/A	Not feasible/environmentally damaging
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Hazardous Tree Removal	
Project Number:	2021-Borough of Pennington-010	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect lives from falling trees
Property Protection	1	Project will protect properties from falling tree damages
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	The Borough has the legal authority to conduct the project on public lands but not on private property
Fiscal	0	Project requires funding support
Environmental	1	Project will address environmental impacts of invasive species
Social	1	
Administrative	1	
Multi-Hazard	1	Hurricane, Nor'Easter, Severe Weather, Severe Winter Weather, Infestation, and Invasive Species
Timeline	0	
Agency Champion	1	Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	