9.23 TOWNSHIP OF MONTVILLE

This section presents the jurisdictional annex for the Township of Montville. The annex includes a general overview of the Township of Montville; an assessment of the Township of Montville's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.23.1 Hazard Mitigation Planning Team

The following individuals are the Township of Montville's identified HMP update primary and alternate points of contact and NFIP Floodplain Administrator.

Table 9.23-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name / Title: Nicola Marucci, PE-PLS, Township Engineer Address: 195 Changebridge Road Montville, NJ 07045-9498 Phone Number: 973-331-3321 Email: nmarucci@montvillenj.org	Name / Title: Victor M. Canning, Township Administrator Address: 195 Changebridge Road Montville, NJ 07045-9498 Phone Number: 973-331-3302 Email: vcanning@montvillenj.org
NFIP Floodplain Administrator	
Name / Title: Nicola Marucci, PE-PLS, Township Engineer Address: 195 Changebridge Road Montville, NJ 07045-9498 Phone Number: 973-331-3321 Email: nmarucci@montvillenj.org	

9.23.2 Jurisdiction Profile

The Township of Montville is located in the eastern region of Morris County; it is bordered by the Town and Township of Boonton and Parsippany-Troy Hills to the west, East Hanover to the south, Fairfield and Lincoln Park (Passaic County) to the west, and Kinnelon to the north. Major waterways include, the Passaic River, which flows along its eastern border, the Rockaway River, which flows along its western border, and the Whippany River, which flows along the southern border of the Township. According to the U.S. Census, the total area of the Township is 19.1 square miles, 18.5 square miles of land and 0.58 square miles of water. The Township has two unincorporated communities, Pine Brook and Towaco.

The Township is also located in the New Jersey Highlands Region, one of the 88 municipalities protected by and subject to the provisions of the Highlands Water Protection and Planning Act. The entire Township is located within both the Highlands Planning (8,793 acres) and Preservation (3,440 acres) Area.

According to the U.S. Census, the 2010 population for the Township of Montville was 22,306. The estimated 2017 population was 22,498, a 0.9 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 4.4 percent of the population is 5 years of age or younger and 20.2 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.

9.23.3 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. Table 9.23-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figures 9.23-1 and 9.23-2 at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development.

Table 9.23-2. Recent and Expected Future Development

Type of Development	2014	2015	2016	2017	2018
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single Family	1	2	6	7	12
Multi-Family	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	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					
Kids R Kids Preschool/ Daycare	School/ Daycare	1	217 Changebridge Road (Bl. 138, Lot 8)	None	Complete
StonyBrook Boutiques	Mixed Use/ Residential	1	9 Main Road (Bl. 47, Lot 2)	None	Complete
Shops On Main	Mixed Use	2	652 Route 202 (Bl. 40, Lot 49.01	None	Complete
Shops On Main II	Mixed Use/ Residential	6	662 Route 202 (Bl. 40, Lots 48.01/ 48.02	None	Complete
Windsor Estates	Residential	10	10 Woodmont Road (Bl. 159, Lot 6)	None	Complete
Morris Animal Inn	Animal Shelter	1	83 Boonton Ave. (Bl. 3, Lots 40.01/ 39.01)	None	Complete
Fred Astaire Dance Studio	Business	1	688 Main Road (Bl. 40, Lot 33.01	None	Complete
Montville Residency	Residential	1	17 Hook Mtn Road (Bl. 160, Lot 4)	None	Complete
Evangelical Mission	Recreation Building	1	36 Alpine Road (Bl. 111, Lot 15.06)	None	Complete
44 Hillcrest Subdivision	Residential	4	Hillcrest Ave (Bl. 74, Lots 1.01, 1.02, 1.03, 1.04)	None	Complete

Pinto Business Park	Business	3	151 River Road (Bl. 131, Lots 17.01, 17.02, 17.03)	1% annual chance flood	Complete
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Possible Solar Farm	Solar Farm	N/A	Changebridge Road-Metro Tract (Bl. 131, Lot 15.03)	None	Proposed
Main Road Self Storage Facility	Business	1	350 Main Road (Bl. 57.01, Lot 6)	None	Proposed
Room Road Subdivision	Residential	7	18 Roome Road (Bl. 106, Lot 23.02; Bl. 109, Lot 41)	None	Proposed
Abbott Road Subdivision	Residential	6	34 Abbot Road (Bl. 39.06, Lot 99.03)	None	Proposed
Woodland Properties Subdivision	Residential	4	3 Woodland Road (Bl. 139, Lot 5)	None	Proposed
Avalon Bay	Residential	1 Bldg; 349 Units	85 Bloomfield Ave (Bl. 167, Lot 178; Bl. 179, Lots 28-32)	1% annual chance flood	Proposed
Mill Creek	Residential	1 Bldg; 295 Units	340 Changebridge Road (Bl. 159, Lots 5.01 & 5.02)	None	Proposed
44 Stiles Lane	Mixed Use	1	44 Stiles Lane (Bl. 149.04, Lot 4.01)	None	Proposed

** Only location-specific hazard zones or vulnerabilities identified.*

9.23.4 Capability Assessment

The Township of Montville 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 legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community's adaptive capacity for the impacts of climate change.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and

each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized below. The Township of Montville identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

Planning, Legal and Regulatory Capability

The table below summarizes the legal and regulatory tools that are available to the Township of Montville and where hazard mitigation has been integrated.

Table 9.23-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State and Local	Yes	No	-
Comment: *State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter 129 Construction Codes, Uniform. Administered by the Building Department.*					
Zoning Code	Yes	Local	Yes	No	-
Comment: *Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. Chapter 230 Land Use and Development Part 4 Zoning Regulations. Administered by the Land Use Department.*					
Subdivisions	Yes	Local	Yes	No	2020-Monteville-010
Comment: *Chapter 230 Land Use and Development Part 2 Subdivision and Site Plan Regulations. Administered by the Land Use Department.*					
Stormwater Management	Yes	Local	Yes	No	-
Comment: *Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 230 Land Use and Development Part 3 Stormwater Management Requirements. Administered by the Land Use Department.*					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: *N.J.A.C. 13:45A-29.1; 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 proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.*					
Growth Management	No	-	Yes	-	-
Comment: *State mandated at local level;*					
Shoreline Development	Yes	Local	Yes	No	-
Comment: *Chapter 230B, Highlands Preservation Area Land Use, Article 6 Highlands Preservation Area Resource Regulations, Shoreline Protection Tier.*					
Site Plan Review	Yes	Local	Yes/No	No	2020-Monteville-010
Comment: *Chapter 230 Land Use and Development Part 2 Subdivision and Site Plan Regulations. Administered by the Land Use Department.*					
Environmental Protection	Yes	State and Local	Yes	No	-
Comment: *The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 171 Fertilizer. Chapter 308 Soil Movement. Chapter 311 Soil Testing and Cleanup. Chapter 368 Trees.*					
Flood Damage Prevention	Yes	Local	Yes	No	-
Comment*: Chapter 200 Flood Hazard Protection updated in 2016.. 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:* • *Protect human life and health.* • *Minimize expenditure of public money for costly flood control projects.*					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
• *Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.* • *Minimize prolonged business interruptions.* • *Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard.* • *Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood-blight areas.* • *Ensure that potential buyers are notified that property is in an area of special flood hazard.* • *Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.*					
Wellhead Protection	Yes	Local	-	-	-
Comment: *Chapter 399 Wells.*					
Emergency Management	Yes	Local	-	No	-
Comment: *Chapter 43 Mutual Aid, Chapter 49 Officers and Employees.*					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	Yes	Local	-	No	2020-Monteville-010
Comment: *Chapter 442 Water Supply. Chapter 368 Trees. Chapter 230B Steep Slope.*					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	2020-Monteville-010
Comment: *Master Plan adopted in 2013. Reexamination in draft for 2019. Hazard mitigation related goals in the plan include: To ensure that any prospective development is responsive to the Township's environmental features and that any development preserves these physical characteristics; To continue the Township's recreation and open space planning and acquisition activities, and encourage the design of open space features in developments to abut the open spaces of adjacent properties; To encourage and provide buffer zones to separate incompatible land uses; Provide and maintain a superior system of community facilities and services, including water and sanitary sewer utilities, fire, police, and other public safety services, public works and library facilities; To identify Wellhead Protection Areas for public community water supply wells. The Plan also includes recommendations to clarify language in the tree protection ordinance and include the information in the steep slope ordinance into the land use ordinance.*					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: *Per NJSA 40:55D-29 the governing body is authorized to direct the planning board to prepare a CIP with at least a six year planning horizon. 6 Year Capital Improvement Plan, 2014. Administered by Administration.*					
Disaster Debris Management Plan	No	-	No	-	2020-Monteville-013
Comment: *Montville Public Works Department is typically dispatched for cleanup after major storms or disaster declared emergencies. The Department keeps track of time (man hours), material and disposal fees for these efforts.*					
Floodplain or Watershed Plan	Yes	Local	No	No	-
Comment: *Chapter 230 of municipal code. 2013. Administered by Engineering.*					
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: *Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Chapter 323 of the municipal code. Administered by Engineering.*					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	-
Comment: *Administered by Engineering*					
Urban Water Management Plan	No	-	No	-	-
Comment: *Have targeted areas of urban flooding.*					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment: *Have fire districts that may have plans.*					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	Yes	Local	No	No	-
Comment: *Included in Master Plan. Administered by Land Use.*					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	Yes	Local	No	No	-
Comment: *Have an EDC through the Chamber of Commerce*					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: *Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years. Administered by Police/OEM.*					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	Yes	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: *Included in Emergency Operations Plan.*					
Public Health Plan	Yes	Local	No	-	-
Comment: Administered by the Health Officer					
Other	No	-	No	-	-

Table 9.23-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Land Use, Engineering, Zoning, and Building
Does your jurisdiction have the ability to track permits by hazard area?	Yes, SFHA is documented in excel spreadsheets and are working to use Spatial Data Logic.
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, vacant lands inventory

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Township of Montville.

Table 9.23-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Land Use, Environmental Commission
Open Space Board / Committee	Yes	Administration
Economic Development Commission / Committee	Yes	Land Use
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes/No	Use Nixle, social media, website
Maintenance program to reduce risk	Yes	Public Works
Mutual aid agreements	Yes	Administration/Police, Chapter 43 of the municipal code
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Land Use & Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Land Use & Engineering & Construction
Planners or engineers with an understanding of natural hazards	Yes	Land Use & Engineering

Staff/Personnel Resource	Available?	Department/Agency/Position
Staff with training in benefit/cost analysis	Yes	Finance
Staff with training in green infrastructure	Yes	Construction department
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	Yes	Engineering
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Land Use & Engineering
Local or state water quality professional	Yes	State Licensed Operator for drinking water
Scientist familiar with natural hazards in local area	No	Land Use, Engineering, & Administration
Emergency manager	Yes	Police
Watershed planner	Yes	Planning
Environmental specialist	Yes	Engineering
Grant writers	Yes	Land Use & Administration
Resilience Officer	Yes	Identified through OEM per hazard event
Other	No	

Fiscal Capability

The table below summarizes financial resources available to the Township of Montville.

Table 9.23-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes/Administration
Capital Improvements Project Funding	Yes/Administration & Engineering
Authority to Levy Taxes for Specific Purposes	Yes/Governing Body
User Fees for Water, Sewer, Gas or Electric Service	Yes/Water & Sewer
Incur Debt through General Obligation Bonds	Yes/Finance
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Open Space Acquisition Funding Programs	Yes - Administration
Highlands Grants for Stormwater and Stream Corridor Restoration and Protection Plan	Yes; Administration and Land Use
Other	County Flood Acquisition Program

Education and Outreach Capability

The table below summarizes the education and outreach resources available to the Township of Montville.

Table 9.23-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, Administration.

Criterion	Response
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	OEM hosts flood information.
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Board of Health
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Could work with Chilton Hospital
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Use Nixle, social media, website

Community Classifications

The table below summarizes the classifications for community programs available to the Township of Montville.

Table 9.23-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	2010
Public Protection (Fire ISO Protection Class)	Yes	4	2010
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	3/24/2009

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 ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction's rating.

- Does the municipality have access to resources to determine the possible impacts of climate change upon the municipality? Yes
- Is the administration supportive of integrating climate change in policies or actions? Yes
- Is climate change already being integrated into current policies/plans or actions (projects/monitoring) within the municipality? Entered into contract with solid waste hauler to convert to use of natural gas for their fleet. Recycling program includes additional items to expand on recyclable materials.

Table 9.23-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Dam Failure	Medium
Disease Outbreak	Medium

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	High
Geologic	Medium
Harmful Algal Bloom	Low
Hazardous Substances	Medium
Infestation	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

NATIONAL FLOOD INSURANCE PROGRAM

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 9.23-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Nick Marucci, Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Engineer
What is the date that your flood damage prevention ordinance was last amended?	Originally written in 1998, updated in 2016
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Exceeds. Any development in the 500-year floodplain goes through a review by the engineer and will include flood related recommendations.
When was the most recent Community Assistance Visit or Community Assistance Contact?	2018
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No. Township was included in the Hackensack-Passaic Watershed, 02030103 Flood Risk Report.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Currently appealing the floodway map.
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
□ If so, what type of assistance/training is needed?	Could benefit from additional staffing.
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?* • What is the insurance in force? • What is the premium in force?	Flood insurance policies: 209 Insurance in force: $77,819,600 Premium in force: $315,881
How many total loss claims have been filed in your jurisdiction?* • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 128 Claims open or closed without payment: 32

Criterion	Response
	Total payments for losses: $3,359,778
Do you maintain a list of properties that have been damaged by flooding?	Yes, including nuisance flooding.
Do you maintain a list of property owners interested in flood mitigation?	Yes

**According to FEMA statistics as of 9/30/2018*

ADDITIONAL AREAS OF EXISTING INTEGRATION

Planning Board: The Montville Planning Board is responsible for generating and updating the community's master plan, a comprehensive, long-range plan intended to guide the growth and development of a community. This document contains elements that provide for future economic development, housing, recreation, open space, transportation, community facilities and land use. The Master Plan is then used to develop and implement broad land use policies for guiding the growth of a municipality. Other functions of the Planning Board involve subdivision and site plan review, creating the official map and associated zoning ordinances and reviewing the capital improvements program for the Township. The Board is also empowered with the ability to approve "C" variances (departures from zoning ordinances) in conjunction with development applications and also establishes procedures for review of these applications.

Zoning Board of Adjustment: The Zoning Board of Adjustment powers are very specific and different from the Planning Board in that they are required to review departures from our Township's Zoning laws. The Zoning Board of Adjustment's principal duties are to hear appeals, to grant variances from the strict application of the zoning ordinance and to rule on "use" applications.

Environmental Commission: The Environmental Commission conducts reviews on the use and possible use of the open land areas of the Township of Montville and may coordinate the activities of unofficial bodies organized for similar purposes. It maintains an index of all open areas, publicly or privately owned, including open marshlands, swamps and other wetlands, in order to obtain information on the proper use of such areas. From time to time, it recommends, to the Montville Township Planning Board or the Township Committee, plans and programs for inclusion in the Township of Montville Master Plan and the development and use of such areas. The Commission also studies and makes recommendations concerning open space preservation, water resources management, air pollution control, solid waste management, noise control, soil and landscape protection, environmental appearance, marine resources and protection of flora and fauna. The Environmental Commission is also involved in the development review process and may submit a report to the Planning Board. A report from the Environmental Commission is required wherever an application includes an environmental impact statement.

Open Space Committee: The Montville Township Open Space Committee works with the Planning Board and the Township Committee in an effort to preserve land in Montville Township. The group meets monthly to discuss issues that affect the Township's Open Space Plan and periodically assists in the revision of the Master Plan. Montville Township residents have repeatedly approved, through referendum, one of the most aggressive open space programs in the state of New Jersey. It is the goal of the Open Space Committee to execute this strategy and preserve one of the most valuable resources the Township has, its land, character, and environment.

Engineering Department: The Engineering Department is responsible for the construction of roads, parking facilities, land grading and other improvements, except for structures, related to land development applications approved by the Planning Board and Board of Adjustment. New development application files are available for review throughout the Land Use Department, however, the Engineering Department staff is also available for

explanation and interpretation of plans and documents within these development applications. Prospective home buyers and/or existing nearby interested residents are welcome to inquire with their questions. The Engineering Department is also responsible for construction of roads, drainage and public facilities improvements as approved by the Township Committee, and for administration of the Solid Waste Contract.

Land Use Department: The Land Use Department is involved in almost all aspects of land use and development. Its responsibilities include serving as the staff resource for the Township's Land Use Boards, administering the Township's affordable housing program, formulating long range development plans, issuing zoning permits, and the enforcement of zoning ordinances & the property maintenance code.

Montville Township Police Department: Montville Township is a New Jersey Civil service agency located in Morris County. The Department provides 24 hour police protection seven days a week and provides emergency dispatch service for three fire departments in addition to the Montville Township First Aid Squad. The dispatch center also serves as a Public Safety Answering Point staffed around the clock with civilian dispatchers.

Public Works: The Department of Public Works (DPW) is subdivided into four divisions:

- Fleet Division: The Fleet Division is responsible for the acquisition and maintenance of all departmental vehicles, trucks, lawn and field equipment, mowers and specialized DPW apparatus.
- Roads Division: The Roads Division is responsible for maintenance of all municipal roads, snow plowing, ice salting, tree trimming, signs, storm drains, road sweeping, curb repair and stump grinding on public rights of way.
- Facilities Division: The Facilities Division is responsible for the maintenance of all municipal buildings, general grounds, recreational athletic fields and parks.
- Water & Sewer Division: The Water and Sewer Division is responsible for the maintenance of all potable water facilities and sanitary sewer facilities within the municipality.

9.23.5 Hazard Event History Specific to the Jurisdiction

Morris County has a history of 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 in Section 4.4 (Hazard Profiles) and includes a chronology of events that affected Morris County and its jurisdictions. The Township of Montville's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Morris County. Table 9.23-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.23-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Morris County Designated?	Summary of Event	Summary of Local Damages and Losses
January 21-24, 2016	Severe Winter Storm and Snowstorm (DR-4264)	Yes	Wind gusts up to 60 MPH produced blizzard conditions as visibilities dropped to one-quarter mile or less in spots. Snow began during the evening hours on the 22nd, then continued, heavy at times through the 23rd before	Overtime costs and debris removal. The Township was reimbursed by FEMA.

Date(s) of Event	Event Type (disaster declaration if applicable)	Morris County Designated?	Summary of Event	Summary of Local Damages and Losses
			ending early on the 24th. Snowfall totals included 30.0 inches in Long Valley, 29.0 inches in Madison, 26.0 inches in Budd Lake, 25.3 inches in Green Pond, 22.5 inches in Butler, 21.0 inches in Chatham, and 18.0 inches in Marcella. At one point during the storm, up to 270,000 customers were without power.	
March 6-7, 2018	Severe Winter Storm and Snowstorm (DR-4368)	Yes	Precipitation gradually overspread the region during the overnight hours of March 6th to the 7th. 12 to 24 inches was observed across large parts of Morris County. The snow contained large amounts of liquid, making it heavy and wet. This resulted in downed trees, limbs, and wires, leading to numerous power outages across portions of New Jersey, especially where the heaviest snow was reported. Many customers were still without power from the previous storm when this storm struck. Governor Murphy estimated about 350,000 customers state-wide lost power as a result of this second storm. Governor Phil Murphy declared a state of emergency which went into effect at 8 PM Tuesday March 6th.	Overtime costs and debris removal. The Township was reimbursed by FEMA.
August 2018 rain event	Heavy rain event and flash flooding	N/A	Several areas of flash flooding occurred due to heavy rain. Rainfall totals of 2 to 5 inches were reported in northern New Jersey. Additionally, severe thunderstorms impacted the area.	Brief road closures. Asa Street had a stormwater pipe that was damaged by the event. The pipe was replaced and upsized after the damage occurred.

9.23.6 Jurisdiction-Specific Vulnerabilities and Hazard ranking

The hazard profiles in Section 4 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. Table 9.23-12 summarizes the Township of Montville risk assessment results and data used to determine the hazard ranking.

A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. A certainty factor of high, medium or low was selected and assigned to each hazard to

provide a level of transparency and create increased understanding of the data used to support the resulting ranking. The following scale was used to assign a certainty factor to each hazard:

- High—Defined scenario/event to evaluate; probability calculated; evidenced-based/quantitative assessment to estimate potential impacts through hazard modeling.
- Moderate—Defined scenario/event or only a hazard area to evaluate; estimated probability; combination of quantitative (exposure analysis, no hazard modeling) and qualitative data to estimate potential impacts.
- Low—Scenario or hazard area is undefined; there is a degree of uncertainty regarding event probability; majority of potential impacts are qualitative.

Table 9.23-12. Summary of Risk Assessment Results

Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
Dam Failure	Partial or complete failure of a dam There are 12 dams in the Township, according to NJDEP.	Population impacted is dependent on the capacity of the dam, the extent of the dam failure inundation area and the severity of the failure.		The number of building impacted is dependent on the capacity of the dam, the extent of the dam failure inundation area and the severity of the failure.		Economic impacts include dam/building/infrastructure repairs; debris removal/disposal; utility impacts.		Low
Disease Outbreak	Disease Outbreaks which include: Mosquito-Borne Diseases, Tick-Borne Diseases, Campylobacteriosis, Influenza, Mumps, Ebola	Population impacted is dependent on the disease and severity of the outbreak; in some cases immuno-compromised persons are more vulnerable.		Structural impacts due to disease outbreak would be limited.		Economic losses can include County financial impacts to monitor/address outbreaks; lost wages or commercial interruptions; depends on the severity and type of disease outbreak. .		Low
Drought	Prolonged drought event - The County is serviced by water supplies who primarily get water from groundwater sources; some surface water sources.	Entire population exposed. Population on surface water supplies may be impacted first; water restrictions/contamination; increased wildfire risk.		Droughts are not expected to cause direct damage to buildings.		Losses include aesthetic, landscape/nursery/agricultural industry impacts.		Low
Earthquake	100, 500-, 2,500-Year Mean Return Period (MRP) Events evaluated NEHRP Soils D&E (soft soils that amplify ground shaking are present in the County	NEHRP D&E:	5,942	NEHRP D&E:	2,250	100-year Loss:	$0	High
		Liquefaction Class 4:	1,896	Liquefaction Class 4:	749	500-year Loss:	$5,912,502	
						2,500-year Loss:	$93,684,229	
Extreme Temperature	Extreme temperature event (heat or cold)	Over 65 Population:	3,521	Physical impacts due to extreme temperatures would be limited.		Loss of business function is possible due to unexpected repairs (i.e. pipes bursting) or power failures.		Low
		Population Below Poverty Level:	717					
Flood		100-year	457	100-year	234		$372,298,816	High

Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
	100- and 500-Year Mean Return Period Event	500-year	1,221	500-year	508	100-year Loss:		
Geological	High Landslide Susceptibility Areas and Areas developed over carbonate rock	Class A:	68	Class A:	25	Class A:	12859883.44	Moderate
		Class B:	13	Class B:	5	Class B:	$3,434,347	
		Carbonate Bedrock:	0	Carbonate Bedrock:	0	Carbonate Bedrock:	$0	
Harmful Algal Bloom	Any body of water or area adjacent that is susceptible to harmful algal bloom.	Population in contact (e.g., swimming) or drinking water from surface water impacted can result in a range of health effects		General building stock impacts due to harmful algal bloom are not anticipated. Critical facilities (i.e., water treatment plants) could lead to plant closures.		Economic impacts range from recreational closure of impacted waterbodies; cost to sample/monitor/remediate.		Low
Hazardous Substance	Release of a hazardous substance from a fixed site.	Population impacted will depend on the type of material and scale of the incident. May include population within small radii of site.		The degree of damages to a building depends on the scale of the incident.		The degree of damages depends on the scale of the incident.		Low
Infestation	Infestation including: Insects [e.g. Gypsy Moth, Mosquitoes, Spotted Lanternfly, Emerald Ash Borer], White-Tailed Deer, Rodents	Population impacted will depend on the type and severity of infestation and may cause an increased risk for disease outbreak.		Physical impacts will be limited to indirect impacts from invasive species which affect crops and vegetation.		Economic impact will depend on the type and severity of infestation and may cause an increased risk for disease outbreak.		Low
Severe Weather	Severe Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		Entire building stock is exposed; The degree of impact depends on the scale of the incident.		Annualized Loss:	$107,081	High
						100 -Year Loss:	$1,136,979	
						500-year Loss:	$7,884,694	
Severe Winter Weather	Severe Winter Weather Event	All residents/commuters/visitors are exposed; socially-vulnerable populations may be at increased risk.		All buildings are exposed; the degree of impact depends on the scale of the incident.		The cost of snow and ice removal and repair of roads/infrastructure can impact operating budgets.		Low
Wildfire	Wildfire Fuel Hazard areas (High, Very High, Extreme)	Wildfire:	67	Wildfire:	31	Wildfire:	$30,940,427	Moderate

Repetitive Flood Losses

The table below summarizes the repetitive and severe repetitive flood losses in the Township of Montville.

- Number of repetitive loss (RL) properties: 3
- Number of severe repetitive loss (SRL) properties: 2
- Number of RL/SRL properties that have been mitigated: 0

Source: FEMA BureauNet, 2019

Note: RL and SRL as of 04/26/2019; The number of SRL properties excludes RL properties and includes properties that have been verified only (SRL_Indicator = V).

Critical Facilities

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

Table 9.23-13. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
Pinebrook Volunteer Fire Department Station 2*	Fire		X	
Montville Volunteer Fire Department Station 3*	Fire	X	X	2020-Monteville-007
Romaine Gate House - Valve Station*	Wastewater Pump	X	X	2020-Monteville-009
Boonton Reservoir Dam	Dam	X	X	2020-Montville-002
DICAR Inc.	Hazmat	X	X	2020-Monteville-008
Montville Township DPW	DPW		X	

**Identified lifeline*

Additional Identified Vulnerabilities

The jurisdiction has identified the following vulnerabilities within their community:

- The Township has three repetitive loss properties and two severe repetitive loss properties.
- 20-30 flood prone homes are located on Normandy Drive, Sheffield Place Lancaster, Manchester, and Stiles Lane.
- Normandy Drive, Sheffield Place Lancaster, Manchester, and Stiles Lane require stormwater infrastructure upgrades to reduce nuisance flooding.
- The Montville Volunteer Fire Department Station 3, Romaine Gate House Valve Station, Boonton Reservoir Dam and DICAR INCield Place are located in the 100-year floodplain. The Fire Station and Valve Station are lifeline facilities.
- Sump pump icing discharges. Have tied sump pumps into the stormwater system. Pump into the street and cause icing.
- Changebridge Road experiences flooding by the Rockaway River. County Road. Feasibility assessment to do a roadway elevation or other mitigation.

Hazard Area Extent and Location

Hazard area extent and location maps were generated for the Township of Montville that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Montville has significant exposure. Refer to Figures 9.23-1 and 9.23-2.

Hazard Ranking

This section includes 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 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; 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 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Montville. The Township of Montville has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township indicated the following:

- The Township changed the hazard ranking of disease outbreak.
- The Township changed the hazard ranking of hazardous substances from high to medium.
- The Township changed the hazard ranking of infestation from medium to low.
- The Township changed the hazard ranking of wildfire from low to medium.

Table 9.23-14. Township of Montville Hazard Ranking Input

Dam Failure	Drought	Earthquake	Extreme Temperature	Flood	Geological Hazard
Medium	Medium	Medium	Medium	High	Medium

Harmful Algal Bloom	Severe Storm	Severe Winter Storm	Wildfire	Hazardous Substances	Disease Outbreak	Infestation
Low	High	High	Medium	Medium	Medium	Low

9.23.7 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 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 can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.23-15. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
MT – 1: Backup power (generator) for Mountville Township High School (shelter).	Engineering Department	Complete		
MT – 2: Valhalla Dam and Jersey City Reservoir; inundation study.	Engineering Department	In Progress - Jersey City received 2019, Valhalla Dam in progress	X	2020-Montville-001
MT – 3: Elevation of 20-30 flood prone homes located on Normandy Drive, Sheffield Place Lancaster, Manchester, and Stiles Lane.	Engineering Department	In Progress - 1 elevation at #17 Lancaster	X	2020-Montville-002
MT – 4: Alert system downstream of Boonton Dam in conjunction with Boonton Town and Parsippany.	OEM	No Progress	X	2020-Montville-002
MT – 5: Acquisition /elevation of properties Lancaster Avenue, River Road, and Rennes Street which are routinely damaged by flooding events	OEM	No Progress		
MT – 6: Secure secondary dispatch location for police at the First Aid Squad Building – 137 Changebridge Road	Police-OEM	Complete		
MT – 7: Normandy Drive, Sheffield Place Lancaster, Manchester, and Stiles Lane. Stormwater infrastructure improvements	Engineering/ DPW	In Progress - Hatfield desnagging (2 Phases complete) - need more detail	X	2020-Monteville-003
MT – 8: Back-up power for key infrastructure facilities including pump stations and lift stations	Engineering/ DPW	Complete: All three wells have backup power. All pump stations have backup power.		
MT – 9: Municipal Building parking lot flooding issue stormwater improvements	Engineering/ DPW	Complete		
MT – 10: Backup solar power for lights at key intersections along route 46 and 202, and Changebridge Road	Engineering/ DPW	No progress. Township does not have jurisdiction over the lights (46 - NJDOT; County for 202 and Changebridge		
MT – 11: Stream Corridor Management and Restoration Plan	Land Use	No progress. Discontinue - Lincoln Park and Fairfield - Lower Passaic and Hook Mountain - desnagging effort with PVSC - Ongoing channel; Hatfield Creek - desnagging		

In addition to the above progress, the Township of Montville identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- Changebridge Road by Montowac Dam leakage: The Township has received DEP permits to lower the lake to make repairs which will be completed spring-summer of 2020.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Montville participated in a risk assessment workshop in November 2019 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Montville participated in a mitigation action workshop in March 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Morris County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and 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). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.23-16 summarizes the comprehensive-range of specific mitigation initiatives the Township of Montville would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can 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 (Mitigation Strategy), 14 criteria were used to evaluate each action, including an evaluation of the benefits and costs. For each new mitigation action, a numeric rank was assigned (-1, 0, or 1) for each of the 14 evaluation criteria. The results of this evaluation, in addition to input from the jurisdiction, were then used to prioritize the mitigation initiatives as 'High', 'Medium', or 'Low.' Table 9.23-17 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.

Table 9.23-16. Proposed Hazard Mitigation Initiatives and Associated Priority

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-Montville-001	Valhalla Dam and Jersey City Reservoir; inundation study.	Valhalla Dam and Jersey City Reservoir dam failure impacts are unknown.	Complete inundation study of Valhalla Dam and Jersey City Reservoir.	Existing	Dam Failure	2, 3	Engineering Department	PDM	Emergency planning improved	$15,000	3 years	Medium	LPR	PP, PR, ES
2020-Montville-002	Conduct outreach to residents downstream of Boonton Dam	Homes are located in the inundation area of Boonton Dam	The Township will conduct outreach to residents in the inundation area.	Existing	Dam Failure	1	Engineering Department	Municipal budget	Residents better prepared	$500	1 year	High	EAP	PI
2020-Monteville-003	Stormwater infrastructure improvements	Normandy Drive, Sheffield Place Lancaster, Manchester, and Stiles Lane require stormwater infrastructure upgrades.	Complete stormwater upgrades	Existing	Severe Storm, Flood	3	Engineering Department, DPW	FMA, HMGP, RFC, SRL	Flood risk reduced	$250,000	5 years	High	SIP, NSP	PR, PP, SP
2020-Monteville-004	Remove and Relocate Township Fuel Pumps	Flooding occurs in the area of the Township's fuel pumps. When flooding occurs, it prevents emergency vehicles from refueling. The fuel pumps are also located along the river and a spill could lead to contamination. A previous spill resulted in some fuel making it to	The Township will remove and relocate the fuel pumps to a location that is out of the floodplain.	Existing	Flood, Severe Storm, Hazardous Materials	3	Montville Engineer	HMGP, PDM, FMA, County/municipal budget	Reduction in flood risk, environmental concerns	$300,000	1 year	High	SIP	PP, ES

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		the river but it was contained.												
2020-Monteville-005	Hatfield Creek De-snagging and Slope Stabilization	Hatfield Creek is prone to flooding issues. Flooding has the potential to result in streambank failure which could raise potential flooding heights and impacts.	The Township will complete a survey of Hatfield Creek to identify snags and areas of slope failure. The Township will remove fallen trees and des-nag the stream to prevent blockages that contribute to flooding. The Township will install appropriate slope protection measures in areas requiring corrective measures.	N/A	Flood	3	Montville Township Engineer	HMGP, Township budget	Flood losses avoided	$300,000	6-12 months	Medium	NSP	NR
2020-Monteville-006	Mitigate flood-prone properties, including RL/SRL properties	Frequent flooding events have resulted in damages in the Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area. This area is residential, and these properties have been	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	Existing	Flood, Severe Storm	3, 4	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	$3M	3 years	High	SIP	PP

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		repetitively flooded as documented by paid NFIP claims.	Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area						for the municipality increasing flood storage.					
2020-Monteville-007	Montville Volunteer Fire Department Station 3	Montville Volunteer Fire Department Station 3 is located in the 100-year floodplain. The facility is a critical facility. The facility is likely on the edge of the floodplain and may already be located above the flood elevation.	The Township will determine the flood vulnerability of Montville Volunteer Fire Department Station 3. The Township will complete any mitigation actions that may be necessary.	Existing	Flood	3	Montville Engineer	Township budget, HMGP, FMA	Protection of lifeline facility from flood risk	$5,000	Within 3 years	High	SIP	PP
2020-Monteville-008	Outreach to flood prone private facilities	DICAR Inc. is a hazardous materials facility located in the 100-year floodplain.	The FPA will complete outreach to the facility owner regarding flood exposure and potential mitigation actions.	Existing	Flood, hazardous materials	1	FPA	Municipal budget	Facility owner aware of flood risk and mitigation	Staff time	Within 6 months	High	EAP	PI

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
									options					
2020-Monteville-009	Romaine Gate House - Valve Station	Romaine Gate House - Valve Station is located in the 1-percent floodplain.	Conduct study to determine if Romaine Gate House - Valve Station is protected against impacts from flooding. If determined to be vulnerable, floodproof the structure to ensure the station remains functional during an event.	Existing	Flood	3	Engineering	BRIC, municipal budget	Reduction in flood exposure to pump stations	$15,000	2 years	High	SIP	PP
2020-Monteville-010	Improve language in hazard related ordinances	The Master Plan has identified areas of improvement to be made in hazard related ordinances.	Clarify language in the tree protection ordinance and include the information in the steep slope ordinance into the land use ordinance.	New and Existing	Severe Storm, Severe Winter Storm, Geologic Hazard	1, 2	Administration	Municipal budget	Increased hazard related integration	Staff time	Within 1 year	High	LPR	PR
2020-Monteville-011	Sump pump icing discharges	Sump pumps that discharge into streets cause icing during extreme cold events and winter storms	Tie sump pumps into the stormwater system.	Existing	Extreme Temperature, Severe Winter Storm	3	Public Works	Township budget	Reduction in iced roadways	$300 per hook up	Within 5 years	High	SIP	PP
2020-Monteville-012	Changebridge Road flooding	Changebridge Road experiences	Encourage County to conduct	Existing	Flood	3	County, Montville Engineer	HMGP, County budget	Reduction in flood	TBD by study	Within	High	SIP	PP

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		flooding by the Rockaway River. The road is a County Road.	feasibility assessment to complete a roadway elevation or other mitigation. Provide support for any potential project						risk to road		5 years			
2020-Monteville-013	Develop Debris Management Plan	The Township does not have an official debris management plan.	Develop Debris Management Plan.	N/A	All hazards	2	Public Works	Municipal budget	Plan in place	Staff time	Within 2 years	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV	*Community Assistance Visit*
CRS	*Community Rating System*
DPW	*Department of Public Works*
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*
PDM	*Pre-Disaster Mitigation Grant 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 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. 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 preserve or restore the functions of natural systems. 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. 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.*

Table 9.23-17. Summary of Evaluation and Action Priority

Initiative Number	Mitigation Initiative 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
2020-Montville-001	Valhalla Dam and Jersey City Reservoir; inundation study.	1	1	0	0	0	1	0	1	1	1	0	0	1	1	8	Medium
2020-Montville-002	Conduct outreach to residents downstream of Boonton Dam	1	1	0	1	1	1	1	1	1	1	0	1	1	1	12	High
2020-Monteville-003	Stormwater infrastructure improvements	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
2020-Monteville-004	Remove and Relocate Township Fuel Pumps	1	1	0	1	1	1	0	1	1	1	1	1	1	1	12	High
2020-Monteville-005	Hatfield Creek De-snagging and Slope Stabilization	1	1	0	1	1	0	0	1	0	0	0	1	1	0	7	Medium
2020-Monteville-006	Mitigate flood-prone properties, including RL/SRL properties	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2020-Monteville-007	Montville Volunteer Fire Department Station 3	1	1	1	1	1	1	1	1	1	1	0	0	1	1	12	High
2020-Monteville-008	Outreach to flood prone private facilities	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Initiative Number	Mitigation Initiative 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
2020-Monteville-009	Romaine Gate House - Valve Station	0	1	1	1	1	1	-1	0	1	1	0	1	1	1	10	High
2020-Monteville-010	Improve language in hazard related ordinances	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2020-Monteville-011	Sump pump icing discharges	1	0	1	1	1	1	1	1	1	1	1	0	1	1	12	High
2020-Monteville-012	Changebridge Road flooding	1	1	1	1	1	0	0	1	1	1	0	0	1	1	10	High
2020-Monteville-013	Develop Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.

Table 9.23-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Dam Failure	2020-Montville-001	2020-Montville-001	2020-Montville-002		2020-Montville-001, 2020-Monteville-013			
Drought					2020-Monteville-013			
Earthquake					2020-Monteville-013			
Extreme Temperatures		2020-Monteville-011			2020-Monteville-013			
Flood	2020-Monteville-003	2020-Monteville-003, 2020-Monteville-004, 2020-Monteville-006, 2020-Monteville-007, 2020-Monteville-009, 2020-Monteville-012	2020-Monteville-008	2020-Monteville-005	2020-Monteville-004, 2020-Monteville-013	2020-Monteville-003		
Geological Hazard	2020-Monteville-010				2020-Monteville-013			
Harmful Algal Bloom					2020-Monteville-013			
Severe Storm	2020-Monteville-003, 2020-Monteville-010	2020-Monteville-003, 2020-Monteville-004, 2020-Monteville-006			2020-Monteville-004, 2020-Monteville-013	2020-Monteville-003		
Severe Winter Storm	2020-Monteville-010	2020-Monteville-011			2020-Monteville-013			
Wildfire					2020-Monteville-013			
Hazardous Substances		2020-Monteville-004	2020-Monteville-008		2020-Monteville-004, 2020-Monteville-013			
Disease Outbreak					2020-Monteville-013			
Infestation					2020-Monteville-013			

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

9.23.8 Staff and Local Stakeholder Involvement in Annex Development

The Township of Montville followed the planning process described in Section 2 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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 who participated and in what capacity. 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 9.23-19. Contributors to the Annex

Entity	Title	Method of Participation
Victor M. Canning	Township Administrator	Primary POC, attended plan participant meetings, provided impact data, assisted in the mitigation strategy
Nicola Marucci, PE-PLS	Township Engineer	Secondary POC, FPA, attended plan participant meetings, provided impact data, assisted in the mitigation strategy
Andrew Caggiano	Police Chief	Attended plan participant meetings, provided impact data, assisted in the mitigation strategy

Figure 9.23-1. Township of Montville Hazard Area Extent and Location Map 1

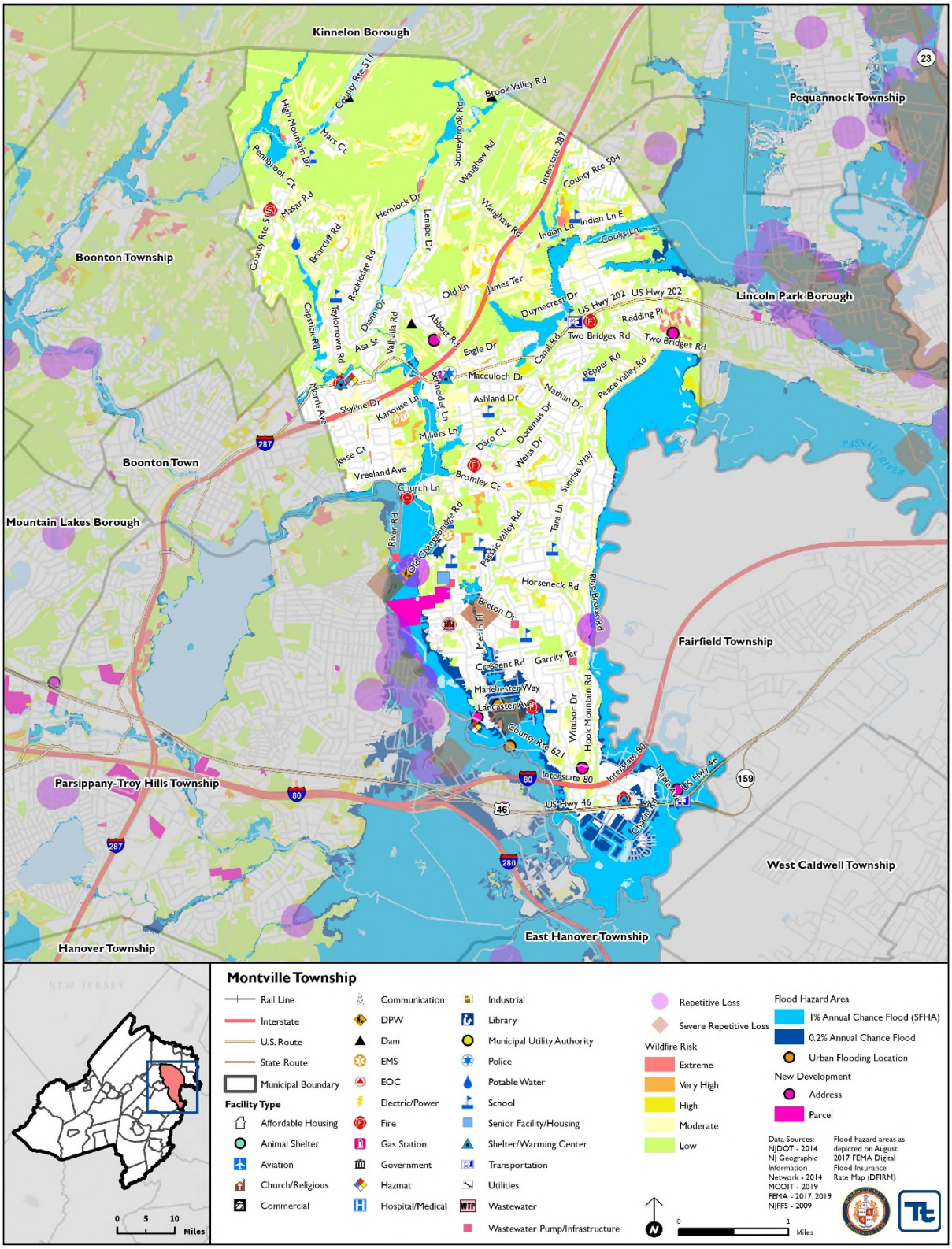
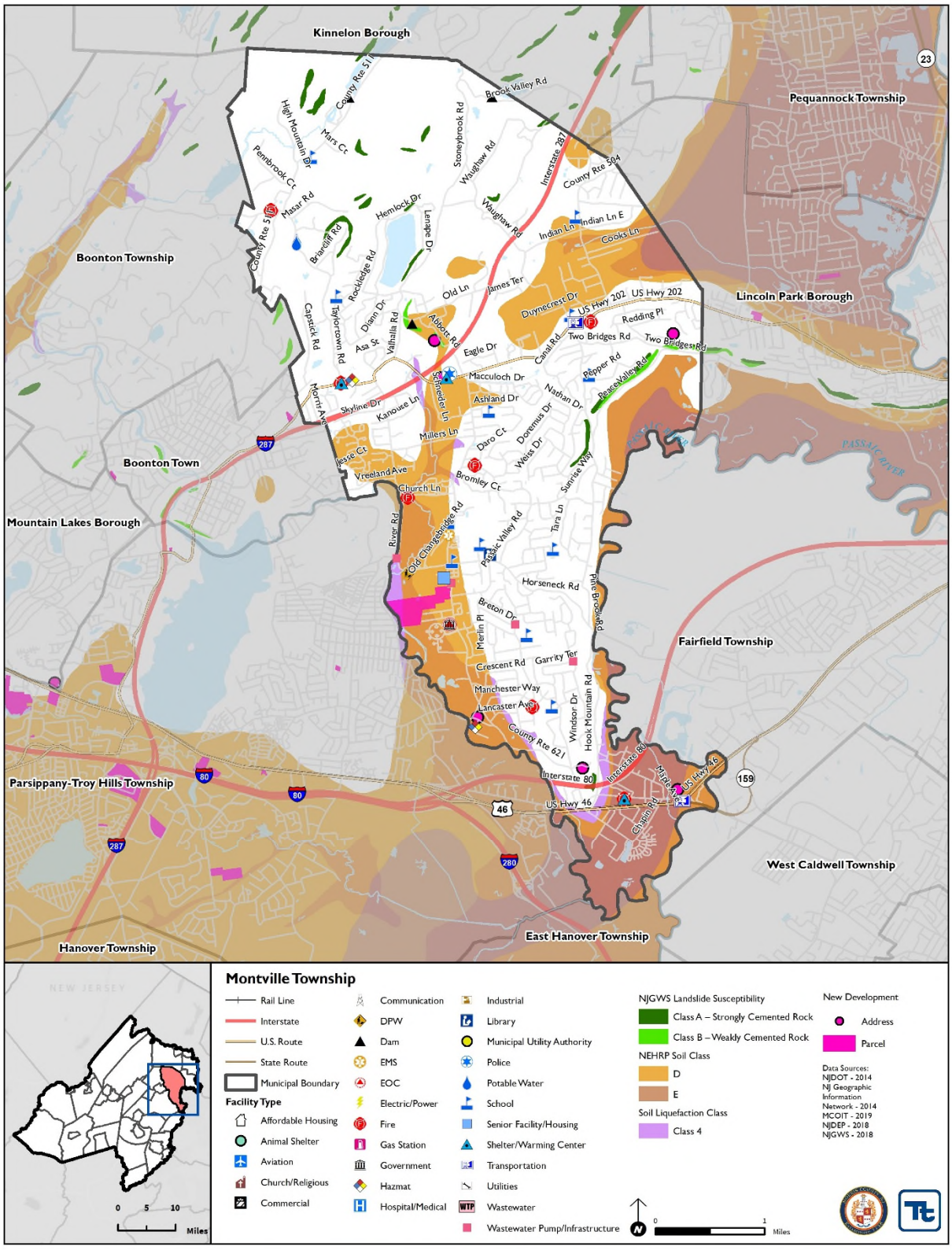


Figure 9.23-2. Township of Montville Hazard Area Extent and Location Map 2



Action Worksheet			
Project Name:	Remove and Relocate Township Fuel Pumps		
Project Number:	2020-Monteville-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm, Hazardous Materials		
Description of the Problem:	Flooding occurs in the area of the Township's fuel pumps. When flooding occurs, it prevents emergency vehicles from refueling. The fuel pumps are also located along the river and a spill could lead to contamination. A previous spill resulted in some fuel making it to the river but it was contained.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will remove and relocate the fuel pumps to a location that is out of the floodplain.		
Is this project related to a Critical Facility or Lifeline?	Yes ☐	No ☒	
Level of Protection:	1% annual chance flood plus freeboard	**Estimated Benefits (losses avoided):**	Reduction in flood risk, environmental concerns
Useful Life:	100 years	**Goals Met:**	3
Estimated Cost:	$300,000	**Mitigation Action Type:**	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	**Desired Timeframe for Implementation:**	6 months
Estimated Time Required for Project Implementation:	1 year	**Potential Funding Sources:**	HMGP, PDM, FMA, County/municipal budget
Responsible Organization:	Montville Engineer	**Local Planning Mechanisms to be Used in Implementation if any:**	Hazard Mitigation Planning

Three Alternatives Considered (including No Action)			
Alternatives:	**Action**	**Estimated Cost**	**Evaluation**
	No Action	$0	Current problem continues
	Floodproof fuel pumps	$10,000	Spill risk continues, access issues remain
	Flood walls around pumps	$30,000	Spill risk continues, access issues remain

Progress Report (for plan maintenance)	
Date of Status Report:	
Report of Progress:	
Update Evaluation of the Problem and/or Solution:	

Action Worksheet		
Project Name:	Remove and Relocate Township Fuel Pumps	
Project Number:	2020-Monteville-004	
Criteria	**Numeric Rank (-1, 0, 1)**	**Provide brief rationale for numeric rank when appropriate**
Life Safety	1	Maintains access of emergency vehicles to fuel
Property Protection	1	Protects fuel pumps from flood damages
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	Reduces risk of spill contaminating river
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Hazardous Materials
Timeline	1	1 year
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	

Action Worksheet

Project Name:	Hatfield Creek De-snagging and Slope Stabilization		
Project Number:	2020-Monteville-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood		
Description of the Problem:	Hatfield Creek is prone to flooding issues. Flooding has the potential to result in streambank failure which could raise potential flooding heights and impacts.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will complete a survey of Hatfield Creek to identify snags and areas of slope failure. The Township will remove fallen trees and des-nag the stream to prevent blockages that contribute to flooding. The Township will install appropriate slope protection measures in areas requiring corrective measures.		
Is this project related to a Critical Facility or Lifeline?	Yes ☐	No ☒	
Level of Protection:	10-year flood event	**Estimated Benefits (losses avoided):**	Flood losses avoided
Useful Life:	15 years	**Goals Met:**	3
Estimated Cost:	$300,000	**Mitigation Action Type:**	Natural Systems Protection
Plan for Implementation			
Prioritization:	Medium	**Desired Timeframe for Implementation:**	6-12 months
Estimated Time Required for Project Implementation:	6-12 months	**Potential Funding Sources:**	HMGP, Township budget
Responsible Organization:	Montville Township Engineer	**Local Planning Mechanisms to be Used in Implementation if any:**	Hazard Mitigation Planning

Three Alternatives Considered (including No Action)			
Alternatives:	**Action**	**Estimated Cost**	**Evaluation**
	No Action	$0	Current problem continues
	Remove properties from floodplain	$250,000 per property	Costly
	Dredge creek	N/A	Permitting unlikely to be granted

Progress Report (for plan maintenance)	
Date of Status Report:	
Report of Progress:	
Update Evaluation of the Problem and/or Solution:	

Action Worksheet

Project Name:	Hatfield Creek De-snagging and Slope Stabilization	
Project Number:	2020-Monteville-005	
Criteria	**Numeric Rank (-1, 0, 1)**	**Provide brief rationale for numeric rank when appropriate**
Life Safety	1	Protects life from flooding
Property Protection	1	Protects properties from flooding
Cost-Effectiveness	0	
Technical	1	
Political	1	There is public support for the project
Legal	0	Project will require permitting
Fiscal	0	Project requires funding support
Environmental	1	Restores natural system
Social	0	
Administrative	0	
Multi-Hazard	0	Flood
Timeline	1	6-12 months
Agency Champion	1	Township Engineer
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	

Action Worksheet

Project Name:	Mitigate flood-prone properties, including RL/SRL properties		
Project Number:	2020-Monteville-006		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Frequent flooding events have resulted in damages in the Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area. This area is residential, and these properties have been repetitively flooded as documented by paid NFIP claims.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 30 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 Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes ☐	No ☒	
Level of Protection:	1% annual chance flood event + freeboard *(in accordance with flood ordinance)*	**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:**	3, 4
Estimated Cost:	$3Million	**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:	Mitigate flood-prone properties, including RL/SRL properties

Project Number:	2020-Monteville-006	
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 Town has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area of Township.
Administrative	0	
Multi-Hazard	1	Flood, Severe Storm
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:	Flood study and mitigation of Romaine Gate House - Valve Station
Project Number:	2020-Monteville-009

Risk / Vulnerability			
Hazard(s) of Concern:	Flood		
Description of the Problem:	Romaine Gate House - Valve Station is located in the 1-percent floodplain.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct study to determine if Romaine Gate House - Valve Station is protected against impacts from flooding. If determined to be vulnerable, floodproof the structure to ensure the station remains functional during an event.		
Is this project related to a Critical Facility or Lifeline?	Yes ☒	No ☐	
Level of Protection:	1-percent plus 2 feet	**Estimated Benefits (losses avoided):**	Reduction in flood exposure to pump stations
Useful Life:	50 years	**Goals Met:**	3
Estimated Cost:	$15,000	**Mitigation Action Type:**	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	**Desired Timeframe for Implementation:**	1 year
Estimated Time Required for Project Implementation:	2 years	**Potential Funding Sources:**	BRIC, municipal budget
Responsible Organization:	Engineering	**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
	Relocate pump stations	N/A	Station needs to remain in current locations
	Purchase deployable floodwall	$15,000	Requires deployment

Progress Report (for plan maintenance)	
Date of Status Report:	
Report of Progress:	
Update Evaluation of the Problem and/or Solution:	

Action Worksheet	
Project Name:	Flood study and mitigation of Romaine Gate House - Valve Station
Project Number:	2020-Monteville-009

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Protects Valve Station
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	0	Flood
Timeline	1	2 years
Agency Champion	1	Engineering
Other Community Objectives	1	Protection of critical facilities
Total	10	
Priority (High/Med/Low)	High	