



9.1 MORRIS COUNTY

This section presents the jurisdictional annex for Morris County. The annex includes a general overview of Morris County; an assessment of Morris County’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.

9.1.1 Hazard Mitigation Planning Team

The following individuals are Morris County’s identified HMP update primary and alternate points of contact.

Table 9.1-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Keith Heimburg Office of Emergency Management 500 West Hanover Avenue, Parsippany, NJ 07054 973-829-8600	Jeffrey Paul Office of Emergency Management 500 West Hanover Avenue, Parsippany, NJ 07054 973-829-8600

9.1.2 Jurisdiction Profile

Section 3 (County Profile), Volume I of this HMP includes details on Morris County’s population, location, climate, history, and growth and development.

9.1.3 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. The jurisdictional annexes for each municipality summarize recent and expected future development trends, including major residential/commercial development and major infrastructure development. The Morris County Department of Planning & Preservation is responsible for reviewing subdivisions of land and site plans, advising freeholders on planning matters, and providing information for individual citizens, industries, public service groups, and government officials.

9.1.4 Capability Assessment

An inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies was developed for the County. Section 5 (Capability Assessment) in Volume I of this plan 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 County’s adaptive capacity for the impacts of hazards.

Areas that mitigation is currently integrated are summarized in this Capability Assessment. Morris County identified specific integration activities that will be incorporated into 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 Morris County and where hazard mitigation has been integrated.

Table 9.1-2. 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	No	State, Local	Yes	No	-
<i>Comment: NJAC 5:23-3, 14; enforced at the local level. The local municipality enforces the building code.</i>					
Zoning Code	No	Local	Yes	No	-
<i>Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Enforced at the local level.</i>					
Subdivisions	No	Local	Yes	No	-
<i>Comment: Site Plan and Subdivision Regulations pursuant to N.J.S.A. 40:27-6 et. seq. This is enforced at the local level. The County Planning Board must review any subdivisions of land within the County and approve subdivisions affecting county roads or drainage facilities.</i>					
Stormwater Management	No	Local	Yes	No	-
<i>Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); enforced at the local level. While the County does not have a stormwater</i>					
Post-Disaster Recovery	Yes	County	-	Yes	-
<i>Comment:</i>					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
<i>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.</i>					
Growth Management	No	-		-	-
<i>Comment:</i>					
Shoreline Development	No	-	Yes; however, for coastal communities	-	-
<i>Comment:</i>					
Site Plan Review	Yes	County and Local	Yes	Yes	-
<i>Comment: The Morris County Planning Board conducts site plan review for land development along county roads or areas affecting county drainage facilities. For these types of projects, the County Planning Board must approve for development. All other development, the site plan review process is done at the municipal level.</i>					
Environmental Protection	No	-	-	-	-
<i>Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.</i>					
Flood Damage Prevention	No	Local	Yes	-	-



	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 #.
<i>Comment: Floodplain management enforced at the local level</i>					
Wellhead Protection	Yes	County but enforced at the local level	No	No	No
<i>Comment: The County has these mapped out through County GIS; but is up to the municipalities if they have an overlay zone and the State enforces.</i>					
Emergency Management	No	-	-	-	-
<i>Comment:</i>					
Climate Change	No	-	-	-	-
<i>Comment:</i>					
Disaster Recovery Ordinance	No	-	-	-	-
<i>Comment:</i>					
Disaster Reconstruction Ordinance	No	-	-	-	-
<i>Comment:</i>					
Other	Yes	County	No	-	-
<i>Comment:</i>					
<ul style="list-style-type: none"> Land Development Standards – May 12, 2004 – presents the procedures, standards and requirements that the Planning Board will follow in its review and approval of land development applications. They supersede and replace the Standards adopted May 26, 1971, as amended and adopted through February 24, 1988. 					
Planning Documents					
Master Plan	Yes	County	Yes	Yes	-
<i>Comment: Elements of the County's master plan include:</i>					
<ul style="list-style-type: none"> Bicycle and Pedestrian Circulation Farmland Preservation Future Land Use Historic Preservation Open Space Wastewater Management Water Supply 					
Capital Improvement Plan	Yes	County	Yes	Yes	-
<i>Comment: This is included in the county's budget each year and performed by the County Administration and Freeholders</i>					
Disaster Debris Management Plan	Yes	County	No	Yes	-
<i>Comment: Completed in April 2012 and incorporated the County's HMP vulnerability assessment to obtain estimated debris produced during each storm.</i>					
Floodplain or Watershed Plan	Yes	County	No	-	-
<i>Comment: No specific plan but have the Natural Resource Management Guide – Planning Department</i>					
Stormwater Management Plan	No	-	Yes – local level	-	-
<i>Comment: At the time of the 2020 update, the County does not have a countywide stormwater management. The County indicated they would like to develop one and have it include the location of all county, local and state stormwater management systems and their outflows. Refer to 2020-MORRIS COUNTY-001 for details on this mitigation action. At the municipal level, the County Planning Board reviews and approves stormwater management plans and ordinances.</i>					
Stormwater Pollution Prevention Plan	Yes	County - Engineering	-	-	-
<i>Comment: Individual plans for county-owned facilities</i>					



	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 #.
Urban Water Management Plan	No	-	-	-	-
<i>Comment:</i>					
Habitat Conservation Plan	Yes	County	No	-	-
<i>Comment: Highlands Commission; Natural Resource Management Guide</i>					
Economic Development Plan	No	County	No	-	-
<i>Comment: The County currently does not have a plan but one is being developed and should be completed by the end of 2021</i>					
Shoreline Management Plan	No	-	-	-	-
<i>Comment:</i>					
Community Wildfire Protection Plan	No	-	-	-	-
<i>Comment:</i>					
Community Forest Management Plan	Yes	Local	No	-	-
<i>Comment: Done at the municipal level but the County Parks is developing one for ash trees (EABs)</i>					
Transportation Plan	Yes	County	No	-	-
<i>Comment: This is an element in the County's Master Plan</i>					
Agriculture Plan	Yes	County	No	-	-
<i>Comment: Comprehensive Farmland Preservation Plan – being updated in 2020</i>					
Climate Action Plan	No	-	-	-	-
<i>Comment:</i>					
Tourism Plan	No	County	No	-	-
<i>Comment: Part of the Economic Development Plan that is being developed</i>					
Business Development Plan	No	County	No	-	-
<i>Comment: Part of the Economic Development Plan that is being developed</i>					
Other	Yes	County	No	-	-
<i>Comment:</i>					
<ul style="list-style-type: none"> The County developed plans for certain watersheds in the county. This includes Jackson Brook, Troy Brook, and McCule Brook 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	County	Yes	-	-
<i>Comment: County EOP updated in April 2018; OEM is responsible for maintaining and updating</i>					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	County	No	-	-
<i>Comment: September 2014; OEM is responsible for maintaining and updating</i>					
Post-Disaster Recovery Plan	Yes	County	No	-	-
<i>Comment: Part of the County's EOP (April 2018)</i>					
Continuity of Operations Plan	Yes	County	No	-	-
<i>Comment: October 2012; OEM Is responsible for maintaining and updating</i>					
Public Health Plan	Yes	County	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 #.
<i>Comment: Public Health - public health nursing portion and REHS portion and health officers portion (Practice Standards); ESF in the County EOP; Pandemic Flu Plan; Regional POD Plans . HAZMAT plan is part of the state plan</i>					
Other	Yes	County	No	-	-
<i>Comment:</i> <ul style="list-style-type: none"> • Mass Evacuation • School Emergency Response • Reunification Plan • Code Blue Plan • Passaic River Climate Resilience Plan • Sheltering Plan (Medical Needs and County) • Long Term Care • Mass Causality • Medical Needs Sheltering 					

Table 9.1-3. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	No – done at the municipal level but County Engineering requires right-of-way occupancy permits
Does your jurisdiction have the ability to track permits by hazard area?	No
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 – part of the wastewater management plan (vacant lands inventory – and identified which were developable). Majority of the development going on in the County is redevelopment .

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to Morris County.

Table 9.1-4. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Morris County Planning Board - assists municipalities by providing a regional framework for municipal planning so that each municipal master plan can be developed as a logical part of its surrounding area; advises Board of Freeholders on planning matters.
Mitigation Planning Committee	Yes	Morris County Flood Mitigation Committee
Environmental Board / Commission	Yes	Morris County Park Commission – oversees the County park system (over 13,000 acres); Morris County Flood Mitigation Committee; Soil Conservation District (non-county)
Open Space Board / Committee	Yes	Morris County Open Space Committee - reviews, prioritizes and makes recommendations to the Morris County Board of Chosen Freeholders on the funding of projects which fall into the municipal/qualified



Staff/Personnel Resource	Available?	Department/Agency/Position
		charitable conservancy category; Morris County Park Commission
Economic Development Commission / Committee	Yes	Morris County Economic Development Corporation is a division of the Morris County Chamber of Commerce, serves as an ally for businesses seeking a new location as well as for those currently operating in the county. It is a partnership of government, businesses and allies dedicated to growing the economy of Morris County, New Jersey through aggressive and effective programs and services that result in business attraction, creation, retention, expansion and transition.
Warning Systems / Services (reverse 911, outdoor warning signals)		AlertMorris allows residents to get emergency notifications through phone, email, text, or social media. Residents can sign-up online. Through this system, Morris County can relay information related to major storms or other emergencies taking place in the County. The County also uses the Rave Notification System where the County sends notification to municipality and they will issue; but if its countywide then the county will send out. The County also uses social media (Facebook and Twitter) to provide information to residents.
Maintenance program to reduce risk	Yes	Through Buildings and Grounds, Engineering and Transportation, and Roads/Bridges/Shade Tree
Mutual aid agreements	Yes	There are no inter-county mutual aid agreements; there are intra-county agreements among the County and municipalities (Health Departments, Road Departments, etc.). The County is also part of Jersey City/Newark UASI which enhances regional preparedness in the counties of Bergen, Essex, Hudson, Middlesex, Morris, Passaic, and Union.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Morris County Planning & Preservation
Engineers or professionals trained in building or infrastructure construction practices	Yes	Morris County Public Works, Division of Engineering & Transportation, Building Construction and Reconstruction, Road and Bridge Division
Planners or engineers with an understanding of natural hazards	Yes	Morris County Planning & Preservation
Staff with training in benefit/cost analysis	Yes	Morris County Planning & Preservation
Staff with training in green infrastructure	Yes	Parks – Natural Resources Team, Horticultural
Staff with education/knowledge/training in low impact development	Yes	Morris County Planning & Preservation
Surveyor	No	Private consultant as needed
Stormwater engineer	Yes	Public Works & County Engineering Department – The Engineer’s scope is very limited to storm water facilities and impacts along County roads and properties
Personnel skilled or trained in GIS applications	Yes	Department of Information Technology – Morris County GIS
Local or state water quality professional	Yes	Public Works & County Engineering Department – The storm water engineer also reviews water quality as they are both a NJDEP requirement of any storm water mitigation.
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Director of Law and Public Safety / County OEM Coordinator
Watershed planner	No	-



Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental specialist	Yes	Park Commission, Mosquito Control, OEM, Health Mgt, HazMat
Grant writers	No	-
Resilience Officer	Yes	Morris County Planning & Preservation
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to Morris County.

Table 9.1-5. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
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
Other	Yes

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to Morris County.

Table 9.1-6. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Office of Communication and Digital Media
Do you have personnel skilled or trained in website development?	Yes – Communication and Digital Media performs all website development and maintenance for all county departments
Do you have hazard mitigation information available on your website? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – <ul style="list-style-type: none"> OEM - Provides links to the County’s HMP, lists NWS warnings Park Commission - Use the website to list when parks are closed and will post signs at the entrances of the parks; some parks are closed during hunting season
Do you use social media for hazard mitigation education and outreach? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – Facebook and Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – CRS Users Group
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – weekly county newsletter emails



Criterion	Response
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, briefly describe. 	AlertMorris allows residents to get emergency notifications through phone, email, text, or social media. Residents can sign-up online. Through this system, Morris County can relay information related to major storms or other emergencies taking place in the County. The County also uses the Rave Notification System where the County sends notification to municipality and they will issue; but if its countywide then the county will send out. The County also uses social media (Facebook and Twitter) to provide information to residents.

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to Morris County.

Table 9.1-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	N/A	N/A
Public Protection (Fire ISO Protection Class)	N/A	N/A	N/A
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No	-	-

N/A = Not applicable

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 County’s rating.

- Does the County have access to resources to determine the possible impacts of climate change upon the municipality? Yes
- Is the administrative 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 County? Yes

Table 9.1-8. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Dam Failure	Medium
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium



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

Notes:

Low = jurisdiction does not have the capability to effectively respond, which leads to increase in vulnerability

Medium = minimum requirements are in place; moderate capabilities; mitigation measures are identified but not implemented widespread; jurisdiction can recover but needs outside resources

High = jurisdiction has the capability to effectively respond, plans/policies exceed minimum requirements; deployable resources all of which decrease vulnerability

NATIONAL FLOOD INSURANCE PROGRAM

Management and regulation of the regulatory floodplains are done at the local level. Refer to the individual jurisdictional annexes for details on the NFIP for each municipality.

ADDITIONAL AREAS OF EXISTING INTEGRATION

The following describes the areas of integration in Morris County.

- **Morris County Division of Mosquito Control** has the goal of reducing the number of nuisance and disease transmitting mosquitoes within the County. It employs a number of techniques to provide this service to residents with minimal impact on the environment. The program conducts extensive monitoring (mosquito surveillance) to determine the number and types (species) of mosquitoes present before any work is carried out. Operations of the Division includes inspection, control, water management, and education and public awareness.

 - **Inspection** – The Division conducts surveillance and inspection programs to monitor mosquito populations. When necessary, staff implement the appropriate control measures. Since 2000, the Division has implemented a comprehensive monitoring, testing, and control program to contain West Nile Virus.
 - **Control** – If surveillance shows the need for control measures, the Division will start control measures. They typically act against the aquatic stage and only control adult mosquitoes when they are extremely abundant.
 - **Water Management** –The Division is responsible for brush cutting, the removal of blockages, and hand restoration of drainage ditches. They also assist municipalities and other County agencies with tree removal if they are creating a mosquito issue. This program will also work on restoring ponds, storm retention facilities, and drainage systems as needed.
 - **Education and Public Awareness** – The Division has an extensive education and awareness program. They provide information handouts, attend public events, and give presentations to groups and schools.
 - After flooding events in the County, Mosquito Control will conduct site reconnaissance and treat areas to prevent the growth of the mosquito population.
- **Division of Engineering & Transportation** - The division secures funding for road, bridge, railroad, bicycle, and pedestrian projects. It serves the county through regional transportation planning, design,



implementation, and coordination of various modes of transportation. The engineering staff is responsible for design, construction, reconstruction, and paving of county roads, as well as bridge and culvert construction, drainage, and repair specifications. Transportation planning staff conduct studies and coordinate planning efforts with state agencies, municipalities, county departments, and the North Jersey Transportation Planning Authority, and supervise three county-owned freight railroads.

- **Division of Road and Bridge** – Maintains, reconstructs, and repairs the 300-mile county-own roads and the County’s 1,000 bridges and culverts.
- **Shade Tree Management** - Protects and cares for trees and ornamental plant life along the rights-of-way of the country road system. Operates a leaf mulch program and nursery to provide trees for roadside planting. Provides consultation to municipalities and non-profit groups.
- **Morris County Municipal Utilities Authority (MUA)** – The Morris County MUA is responsible for solid waste management, recycling services, and water supply planning. Operates transfer station system, household hazardous waste disposal facility and programs, recycling center, curbside recycling collection program, and administers regional composting facilities. Develops and operates the county well fields and potable water distribution system.
- **Southeast Morris County Municipal Utilities Authority (SMCMUA)** -The SMCMUA provides high quality drinking water to customers in Morristown, Morris Township, Morris Plains and Hanover Township with some service in Mendham Township and Harding Township, and to certain customers and municipalities outside its District in Morris County, New Jersey. The 2018 America's Water Infrastructure Act will require SMCMUA to conduct a Risk and Resilience project to be completed by December 2020. In parallel, and subsequent to this, SMCMUA is also required to complete an updated Incident Response Plan.
- **Morris County Community Rating System (CRS) Users Group** – Morris County encourages municipalities to participate in this group to advance their knowledge and understanding of the CRS program. The group meets quarterly, shares information and best practices and maintains continuous dialogue to maintain and improve ratings.
- **Morris County Historic Preservation Trust Fund** – This fund was established by the Morris County Board of Chosen Freeholders to help support the preservation of the County’s abundance of historic resources. The fund was created in November 2002 and authorizes the Freeholders to allow historic preservation funding under the Open Space Trust Fund, as permitted under state legislation. The Fund considers grants for the acquisition, stabilization, rehabilitation, restoration or preservation of historic resources by municipalities, qualified non-profits and the County. In 2019, the Board of Chosen Freeholders approved \$2.9 million in county grants to help preserve, restore, or protect 26 historic sites in 18 municipalities across Morris County.
- **Farmland Preservation Program** – This program began in 1987 after the permanent preservation of the Cupo Farm in Washington Township. Since 1987, over 8,000 acres of farmland have been permanently preserved in Morris County. As part of the County’s Preservation Trust Fund, established in 1992, 25% of the fund each year is allocated for farmland preservation purposes.
- **Flood Mitigation Program** – The Preservation Trust Fund provides funding for the Flood Mitigation Program. Through this, Morris County provides grant funding to municipalities to purchase floodprone homes and land. Once acquired, the homes are demolished and the land is deed restricted as permanently preserved open space. This fund can also be used as a local match for FEMA funded flood mitigation acquisitions. As of May 2020, 77 homes have been acquired through this program (\$8.7 million).
 - Boonton Town
 - Denville Township
 - Lincoln Park Borough
 - Morristown



- Parsippany-Troy Hills Township
- Long Hill Township
- Pequannock Township
- Riverdale Borough
- **Advisory Boards and Committees**
 - **Flood Mitigation Committee** reviews municipal applications for the acquisition and permanent preservation of flood-prone residential properties. The Committee then makes funding recommendations to the Board of Chosen Freeholders. Meetings are held on a monthly basis.
 - **Historic Preservation Trust Fund Review Board** reviews, prioritizes and make recommendations to the Morris County Board of Chosen Freeholders on the funding of historic preservation projects under the Historic Preservation Trust Fund.
 - **Open Space Trust Fund Committee** reviews municipal and non-profit land trust applications for funding the permanent preservation of open space. Funding recommendations are provided to the Board of Chosen Freeholders.

9.1.5 Hazard Event History Specific to the Jurisdiction

Morris County has a history of hazard events, as detailed in Volume I, Section 4 (Risk Assessment) of this plan.

9.1.6 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. The following summarizes the hazards of greatest concern and risk to the County. For additional vulnerability information relevant to this jurisdiction, refer to Section 4 (Risk Assessment).

REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the County. These properties are not owned by the County; therefore, the County has no jurisdiction to mitigate however supports local mitigation projects to address repetitive flooding. Refer to Section 4.3.6 (Flood) for more detailed information on NFIP statistics by municipality, and the municipal annexes in Sections 9.2 through 9.40 for details on the number of mitigated properties in each municipality.

- Number of repetitive loss (RL) properties: 901
- Number of severe repetitive loss (SRL) properties: 196

CRITICAL FACILITIES

The table below identifies critical facilities in the County located in the 1-percent and 0.2-percent floodplain.

Table 9.1-9. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
Long Valley Garage	County-owned		X	

**Identified lifeline*



ADDITIONAL IDENTIFIED VULNERABILITIES

The County has not identified additional vulnerabilities at this time.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps have been generated for the County that illustrate the probable areas impacted. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes (Section 4.3).

HAZARD RANKING

The hazard 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 4.4 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Hudson County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential hazards across Hudson County. The Steering Committee and Planning Committee reviewed the Hudson County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the County. During the review of the hazard ranking, the calculated rankings were adjusted to incorporate the perceived adaptive capacity with respect to the relevant hazard.

During the review of the hazard ranking, the Steering Committee agreed that flood should be a high-ranked hazard. It was noted as a medium-ranked hazard in 2015; however, flood impacts continue to be high and with the addition of climate change the Steering Committee agreed high is the best ranking to reflect risk across the County.

Table 9.1-10. Morris County Hazard Ranking Input

Dam Failure	Disease Outbreak	Drought	Earthquake	Extreme Temperature	Flood	
Medium	High	Medium	Medium	Medium	High	
Geological Hazards	Harmful Algal Bloom	Hazardous Substances	Infestation	Severe Weather	Severe Winter Weather	Wildfire
Medium	Low	High	Medium	High	High	Medium

9.1.7 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 may also be found under ‘Capability Assessment’ presented previously in this annex.

Table 9.1-11. 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 #
Morris County - 1	Collect geologic information on seismic sources and soil conditions to gain an understanding as to what areas in the County are exposed and vulnerable to earthquakes. Develop an inventory of critical facilities that may be vulnerable to earthquake damage.	DP & PW	Ongoing Capability – Included in the County’s HMP update		
Morris County - 2	Collect an inventory of locations where County-owned critical facilities are vulnerable to landslides and develop a database to track the County's vulnerability to landslides.	DP & PW	Ongoing Capability – Included in the County’s HMP update		
Morris County - 3	Using a prioritized list of state, county, and local facilities, coordinate with state effort to survey wind vulnerabilities, based on criteria such as age of the facility, value of operations, etc.	OEM	Ongoing Capability		
Morris County - 4	Conduct wind risk assessments on a limited number of high-priority facilities that appear to be vulnerable to high winds, including facilities that serve as county emergency shelters during disaster. Assessments will use standard FEMA guidelines, procedures and software, including the wind hazard database.	OEM	Complete - New EOC was constructed and meetings current building codes; county emergency shelter (Mennen Arena) meets FEMA requirements		
Morris County - 5	Utilize GIS analysis and mapping to identify potential areas of impact related to hazardous material sites.	OHM	Ongoing Capability		
Morris County - 6	Undertake a survey of County-owned critical facilities to identify and prioritize those that may have structural characteristics that make	DP&PW	Complete - Buildings meet the applicable building codes		



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 #
	them vulnerable to excessive snow and ice loads.				
Morris County - 7	Work with appropriate agencies to identify specific areas that are vulnerable to storm effects, then inventory assets and populations in these areas as the basis for a risk calculation.	OEM	Complete - As part of the 2020 HMP update, all planning partners identified areas that flood outside the floodplain as a result of rain events to assist with identifying drainage problems.		
Morris County - 8	Undertake more detailed engineering studies of dams that may pose risks to the county, based on additional data collected from state or federal agencies.	DP&PW	Complete - County maintains a list of high hazard dams. NJDEP regulates the high hazard dams		
Morris County - 9	Conduct detailed risk assessments for dams that appear to have vulnerabilities, and where there is potential for significant damage or loss of life.	DP&PW	Complete - The Emergency Action Plans include the potential vulnerability of downstream residents.		
Morris County - 10	Participate in the Emergency Preparedness Conference and workshops.	OEM	Ongoing Capability - Something the county always doing - attend several conferences and workshops each year		
Morris County - 11	Develop a database inventory of critical facilities countywide (county-, local-, and privately-owned), including fire and police stations, medical facilities, major public buildings important for emergency response and recovery, and critical lifeline transportation and utility nodes such as bridges, water treatment plants, wastewater treatment plants, high voltage electric substations, and hazardous materials facilities.	OEM	Complete / Ongoing - Part of the 2015 HMP update and the critical facility inventory for the 2020 HMP included an update using County data		
Morris County - 12	Continue working with the State, as well as local jurisdictions, to encourage local cooperation in making Repetitive Loss (RL) (and SRL) property mitigation a high priority, and to offer municipalities technical support in carrying out the requirements of FEMA mitigation programs as well as current	DP&PW	Ongoing Capability - Incorporated into the Planning Department; works with communities to mitigate RL and SRL properties		



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 #
	information related to RL and SRL properties.				
Morris County - 13	Provide outreach and education to municipal OEMs on the plan maintenance of the County HMP and future plan updates.	OEM	Ongoing Capability - Through website, Facebook and twitter		
Morris County - 14	Conduct municipal and community outreach, workshops and training to increase NFIP knowledge and opportunities	DP&PW OEM	Ongoing Capability - Incorporated into the Planning Department		
Morris County - 15	Encourage municipalities to participate in the CRS program, including potentially setting up CRS site visits and/or workshops for interested jurisdictions.	DP&PW	Ongoing Capability		
Morris County - 16	Develop a simple GIS platform, or build upon an existing platform, to maintain and analyze critical facilities inventories and information about hazards.	OEM	Complete / Ongoing - Done through GIS department and they maintain and update as appropriate		
Morris County - 17	Coordinate with state efforts to develop and implement a detailed severe repetitive loss mitigation strategy that will qualify the county and municipalities for additional floodplain management mitigation funding.	DP&PW	Ongoing Capability		
Morris County - 18	Integrate hazard mitigation priorities into Capital Improvement Plans, transportation planning, and other capital planning	DP&PW	Ongoing Capability		
Morris County - 19	Jaqui Mill Pond Dam conduct inspection/risk assessment.	Park Commission	No progress – remove from HMP; this is a County-owned high-hazard dam that the County maintains and updates the EAP		
Morris County - 20	Dam EAP development for five Class III Dams in Morris County.	Park Commission	Complete - County maintains EAPs for the Class III dams		
Morris County - 21	Prepare classification reports to NJDEP for the following Class III dams: Hedden Park, Hedden Reservoir, Doland Tract and Pyramid Mountain	Park Commission	Ongoing Capability - Class II dams inspected every 2 years Class II dams inspected every 4 years County has outside contractor to do the inspections which are then sent to NJDEP		



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 #
Morris County - 22	Work with the Office of Health Management to engage additional agencies for input regarding traditional public health discussions, such as epidemiology or vaccinations.	OHM	Ongoing Capability		
Morris County - 23	Develop Memorandums of Understanding with national chain pharmaceutical companies to establish a resource for medications during disaster	OHM	In Progress - Working with a local pharmacy to have them be part of the Medical Reserve Corps - looking to purchase pill counters and have pharmacist on board to help with dispensing of emergency response medications; form relationship with local pharmacies		
Morris County - 24	Coordinate with municipalities to remove downed vegetative debris within a timely manner and work with Health Management to mitigate against potential infectious disease outbreaks that may occur as a result of uprooted trees.	DP&PW	Ongoing Capability – Mosquito Control will treat as necessary. As trees are uprooted, the area under the root system is a good habitat for mosquitoes		
Morris County - 25	Develop and conduct public outreach about Lyme Disease.	OHM	Ongoing Capability - Something the County is already doing - information is on their website; provide information to residents and communities		
Morris County - 26	Work with GIS and Fire to develop a database of hydrants throughout Morris County	OEM	Complete		
Morris County - 27	Conduct an assessment of currently identified county shelter locations to ensure Americans with Disabilities Act compliance.	OEM OHM	Complete - the only county shelter is Mennen Arena which is ADA compliant		
Morris County - 28	Work with municipalities to conduct outreach to local colleges and universities to increase the volunteer pool for CERT and MRC.	OEM OHM	Ongoing Capability		
Morris County - 29	Develop a communication strategy for specialized messaging for populations with disabilities or access/functional needs.	OEM	Ongoing Capability - The county currently has a system in place and maintains/updates as appropriate		
Morris County - 30	Develop a list of warming and cooling centers throughout the County	OEM DHS	Complete / Ongoing – every time there is an extreme temperature event, the list is updated		



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 #
Morris County - 31	Work with Park Commission to identify and remove harmful insect colonies from County operated park lands.	Park Commission	Ongoing Capability – the Park Commission has an Emerald Ash Borer Response Program		
Morris County - 32	Flanders Adult Training Center (ATC) Backup Power: Install natural gas backup power to ARC Morris Flanders ATC facility (Loretta and Julius Krauklis Center). See Action Worksheet.	ARC Morris	Discontinue - This is not a county-related action; this should be a Mt Olive action		

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

Morris County 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. Morris County 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 9.2 12 summarizes the comprehensive-range of specific mitigation initiatives Morris County 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 4 FEMA mitigation action categories and the 6 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 County, were then used to prioritize the mitigation initiatives as ‘High’, ‘Medium’, or ‘Low.’ Table 9.2-13 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.



Table 9.1-12. Proposed Hazard Mitigation Initiatives and Associated Priority

Initiative Number	Mitigation Initiative Name	Description of the Problem and 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-MORRIS COUNTY-001	Countywide Stormwater Management Plan	<p>Problem: Morris County does not have a countywide stormwater management plan. The County also does not have a system in place that identifies the location of stormwater systems and their outflows in the county. The systems can lead to flooding</p> <p>Solution: Develop a countywide stormwater management plan. The plan will include a study to identify all county, local and state stormwater management systems and their outflows because it impacts flooding in the county and downstream. This will also help with local and county emergency services to identify floodprone areas and aid in identifying where water goes in the event of a HAZMAT incident.</p>	New and Existing	Severe Weather, Flood	3, 4, 5	<u>Planning and Public Safety, Public Works, Health Management</u>	FEMA PDM, County Budget	Identifies stormwater systems throughout County, identifies ways to reduce flooding, increase water quality	\$50,000+	Within 2 years	High	LPR, NSP	PR, NR
2020-MORRIS COUNTY-002	User-Friendly Countywide Flood Map Set	<p>Problem: The current flood maps for the County are inconsistent – they are updated, reviewed, and adopted at different times. This can be confusing for residents to determine whether or not they are located in a floodplain and whether or not they are required to have flood insurance on their structure.</p> <p>Solution: Develop a user-friendly flood map set for municipalities and residents to refer to. The maps will include SFHA and areas subject to stormwater flooding. This will allow an easy way to determine which areas throughout the County are at flood risk.</p>	New and Existing	Flood, Severe Weather	All	<u>Planning, GIS</u>	County Budget	Provides resources for residents to understand flooding and where it floods	\$50,000+	Within 3 years	High	LPR, EAP	PR, PI, PP
2020-MORRIS COUNTY-003	Backup Power Source for Mennen Arena	Problem: Mennen Arena, located at 161 East Hanover Ave. in Morris Township, serves as the Morris County shelter. While the arena has the appropriate electrical equipment for a generator, the arena does not	Existing	All	1, 2, 3, 5	<u>Parks Commission, Public Safety</u>	FEMA HMGP or PDM, County Budget for local match	Continuity of operations, shelter facility for residents	\$75,000	Within 1 year	High	SIP	PP, ES



Initiative Number	Mitigation Initiative Name	Description of the Problem and 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
		<p>have a generator. In the event of a power outage, the arena cannot be used as a proper shelter for residents.</p> <p>Solution: Determine the proper size generator to provide power to Mennen Arena. Once identified, purchase the generator and install.</p>											
2020-MORRIS COUNTY-004	Emerging Diseases Education and Outreach	<p>Problem: The County Office of Health Management works to promote public health, to prevent the spread of disease, and to protect the environment, through awareness, compliance, education, training, and emergency response. They provide information on their website, attend public events, and work with municipalities. Due to the ever-changing environment of the types of emerging diseases impacted the County, the County does not have information available for those diseases (e.g. Ebola, new mosquito-borne and tick-borne diseases, etc.).</p> <p>Solution: Develop public outreach materials for emerging diseases. Diseases will include, but not limited to, Zika, Ebola, Chikungunya, and COVID-19. This will include handouts at municipal halls, information on the county and municipal websites, and presentations at schools and municipal meetings. Resources will also be developed for emergency responders and health care workers.</p>	N/A	Disease Outbreak	1, 2, 3, 5	Office of Health Management	County Budget	Increase awareness throughout county; preparedness of potential diseases	\$25,000+	Within 2 years	High	EAP	PI, ES
2020-MORRIS COUNTY-005	Structural Improvements at Highland Woods and Picatinny Tanks	<p>Problem: After the tank inspection, 2 out of 15 tanks in the system located in Morris Township had broken rafters. In the event of a major snow storm, the roofs may collapse.</p> <p>Solution: Roof rafters at both the tanks need to be repaired or replaced.</p>	Existing	Severe Weather, Severe Winter Weather	2, 3, 5	Southeast Morris County Municipal Utilities Authority	FEMA HMGP	Reduce risk of water loss; protect infrastructure	\$1 million	4 years	High	SIP	PP, ES
2020-MORRIS		<p>Problem: Currently no backup power supply at the mentioned sites</p>	Existing	All	1, 2, 3, 5	Southeast Morris County	FEMA HMGP	Continuity of operations	\$1.5 million	1 year	High	SIP	PP, ES



Initiative Number	Mitigation Initiative Name	Description of the Problem and 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
COUNTY-006	Backup Power at Various Sites	below in Hanover Township. Potential power loss at major water supply sites in the system in the event of a natural hazard like flood or storm. Solution: Backup power generators required at the following sites: Wing Well, Todd Well, Black Brook Wells (all sites located in Hanover Township)				<u>Municipal Utilities Authority</u>							
2020-MORRIS COUNTY-007	Clyde Potts Dam Spillway Improvement	Problem: The Clyde Potts Dam in Mendham Township has visible cracks observed in the dam spillway. Structural damage may result in flooding. Residential areas downstream of dam may get flooded. This is a high hazard dam with structural damage to the spillway which is causing capacity concerns. Solution: NJDEP Dam Safety Division has been currently engaged in a regional study for design flood analysis. Based on the results of the study, site specific study will be performed for the Clyde Potts Dam. The site specific study may require the size of the spillway to be evaluated and upgraded. The spillway design work is anticipated to be performed within 4 to 5 years.	Existing	Dam Failure, Flood	2, 3, 5	<u>Southeast Morris County Municipal Utilities Authority</u>	NJDEP Dam Restoration & Inland Water Projects Loan Program, FEMA High Hazard Potential Dam Grant Program	Spillway repair will reduce risk of dam failure and potential loss of life/property for areas downstream	\$2 million	4 to 5 years	High	SIP	PP
2020-MORRIS COUNTY-008	Black Brook Wells and Treatment Plant Upgrade	Problem: Two groundwater wells and a treatment plant building are below flood elevation in Hanover Township. Loss of water service may happen in the event of a major flood. Solution: Upgrade of the wells and treatment plant buildings to raise them above the flood elevation.	Existing	Flood, Severe Weather	2, 3, 5	<u>Southeast Morris County Municipal Utilities Authority</u>	EPA Clean Water State Revolving Fund, CDBG, NJDEP Environmental Infrastructure Financing Program	Raising the structure levels will eliminate risk of water service loss during a major flood.	\$3 million	2 to 3 years	High	SIP	PP
2020-MORRIS COUNTY-009	HAZMAT Access Points	Problem: There is currently a lack of access points to rivers in the County. During a HAZMAT incident, the HAZMAT team is unable to add booms to areas of	Existing	Hazardous Substances	1, 2, 3, 5	<u>Morris County Office of Health Management,</u>	County Budget	Identifies access points to assist with HAZMAT response	\$20,000	Within 2 years	High	LPR, EAP	PR, PI, ES



Initiative Number	Mitigation Initiative Name	Description of the Problem and 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
		waterbodies because it is unknown as to where the access points are. Solution: Identify pre-determined access points to use during a HAZMAT incident to install proper equipment.				Environmental Services							

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 9.1-13. Summary of Action 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-MORRIS COUNTY-001	Countywide Stormwater Management Plan	1	1	1	1	0	0	0	1	1	1	1	1	1	0	10	High
2020-MORRIS COUNTY-002	User-Friendly Countywide Flood Map Set	1	1	1	1	1	1	1	1	1	1	0	1	1	0	12	High
2020-MORRIS COUNTY-003	Backup Power Source for Mennen Arena	1	1	1	1	1	1	0	0	1	1	1	1	1	0	11	High
2020-MORRIS COUNTY-004	Emerging Diseases Education and Outreach	1	1	1	1	1	1	1	0	1	1	0	1	1	0	11	High
2020-MORRIS COUNTY-005	Structural Improvements at Highland Woods and Picatinny Tanks	1	1	1	1	0	1	1	1	0	1	1	1	1	1	12	High
2020-MORRIS COUNTY-006	Backup Power at Various Sites	1	0	1	1	0	1	1	1	0	1	1	1	1	1	11	High
2020-MORRIS COUNTY-007	Clyde Potts Dam Spillway Improvement	1	1	1	1	0	1	1	1	0	1	1	1	1	1	12	High
2020-MORRIS COUNTY-008	Black Brook Wells and Treatment Plant Upgrade	0	1	1	1	0	1	1	1	0	1	1	1	1	1	11	High
2020-MORRIS COUNTY-009	HAZMAT Access Points	1	1	1	1	1	1	1	1	0	1	0	1	0	0	10	High

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



Table 9.1-14. 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		-003, -006, -007			-003, -006	-003, -006, -007		
Disease Outbreak		-003, -006	-004		-003, -004, -006	-003, -006		
Drought		-003, -006			-003, -006	-003, -006		
Earthquake		-003, -006			-003, -006	-003, -006		
Extreme Temperature		-003, -006			-003, -006	-003, -006		
Flood	-001, -002	-002, -003, -006, -007, -008	-001, -002	-001	-003, -006	-003, -006, -007, -008		
Geological Hazards		-003, -006			-003, -006	-003, -006		
Harmful Algal Bloom (new)		-003, -006			-003, -006	-003, -006		
Hazardous Substances	-009	-003, -006	-009		-003, -006, -009	-003, -006		
Infestation		-003, -006			-003, -006	-003, -006		
Severe Weather	-001, -002	-002, -003, -005, -006, -008	-001, -002	-001	-003, -005, -006	-003, -005, -006, -008		
Severe Winter Weather		-003, -005, -006			-003, -005, -006	-003, -005, -006		
Wildfire		-003, -006			-003, -006	-003, -006		

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

9.1.8 Staff and Local Stakeholder Involvement in Annex Development

Morris County 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 9.1-15. Contributors to the Annex

Entity	Entity	Method of Participation
Jeff Paul	Morris County OEM	Attended meetings; provided information to update the annex
Keith Heimburg	Morris County OEM	Attended meetings; provided information to update the annex
Cindie Bella	Morris County Office of Health Management	Attended meetings; provided information to update the annex
Craig Gross	Morris County Office of Health Management	Attended meetings; provided information to update the annex
Kris McMorland	Morris County Mosquito Control Division	Attended meetings; provided information to update the annex
Christine Marion	Morris County Planning & Preservation	Attended meetings; provided information to update the annex
Joe Barilla	Morris County Planning & Preservation	Attended meetings; provided information to update the annex



Entity	Entity	Method of Participation
Virginia Michelin	Morris County Planning & Preservation	Attended meetings; provided information to update the annex
Tim Rack	Morris County Park Commission	Attended meetings; provided information to update the annex
Zehra Karim	Southeast Morris County Municipal Utilities Authority	Attended meetings; provided information to update the annex
Jeff Elam	Southeast Morris County Municipal Utilities Authority	Attended meetings; provided information to update the annex

DRAFT



Action Worksheet			
Project Name:	Countywide Stormwater Management Plan		
Project Number:	2020-MORRIS COUNTY-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood		
Description of the Problem:	Morris County does not have a countywide stormwater management plan. The County also does not have a system in place that identifies the location of stormwater systems and their outflows in the county. The systems can lead to flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Develop a countywide stormwater management plan. The plan will include a study to identify all county, local and state stormwater management systems and their outflows because it impacts flooding in the county and downstream. This will also help with local and county emergency services to identify floodprone areas and aid in identifying where water goes in the event of a HAZMAT incident.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Identifies stormwater systems throughout County, identifies ways to reduce flooding, increase water quality
Useful Life:	N/A	Goals Met:	3, 4, 5
Estimated Cost:	\$50,000+	Mitigation Action Type:	LPR, NSP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	With 6 months of receiving funds	Potential Funding Sources:	FEMA PDM, County Budget
Responsible Organization:	Planning and Public Safety, Public Works, Health Management	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
	Rely on the municipalities and state to provide the information to the County	\$0	Might not receive accurate information; sources could have different information
	Upgrade all stormwater systems in the County	\$10 million+	Costly; not feasible; long-term project
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Countywide Stormwater Management Plan	
Project Number:	2020-MORRIS COUNTY-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects residents from stormwater flooding
Property Protection	1	Increases integrity of stormwater system
Cost-Effectiveness	1	Benefits outweigh the costs - identifies stormwater systems throughout County, identifies ways to reduce flooding, increase water quality
Technical	1	
Political	0	
Legal	0	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	To be completed within 2 years (depends on funding)
Agency Champion	1	
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power Source for Mennen Arena		
Project Number:	2020-MORRIS COUNTY-003		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
Description of the Problem:	Mennen Arena, located at 161 East Hanover Ave. in Morris Township, serves as the Morris County shelter. While the arena has the appropriate electrical equipment for a generator, the arena does not have a generator. In the event of a power outage, the arena cannot be used as a proper shelter for residents.		
Action or Project Intended for Implementation			
Description of the Solution:	Determine the proper size generator to provide power to Mennen Arena. Once identified, purchase the generator and install.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Continuity of operations, shelter facility for residents
Useful Life:	15 years	Goals Met:	1, 2, 3, 5
Estimated Cost:	\$75,000	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 1 year
Estimated Time Required for Project Implementation:	With 6 months of receiving funds	Potential Funding Sources:	FEMA HMGP or PDM, County Budget
Responsible Organization:	Parks Commission, Public Safety	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
	Install solar panels	\$15,000+	Maintenance costs; not suitable for long term solutions
	Use portable generators	\$10,000+	Not suite for long term solutions; would need multiple generators to power facility
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 Source for Mennen Arena	
Project Number:	2020-MORRIS COUNTY-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide a shelter for residents in the event of an emergency
Property Protection	1	Allows building to function as a shelter during a power outage
Cost-Effectiveness	1	Benefits outweigh the costs
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Need funding to purchase generator
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Structural Improvements at Highland Woods and Picatinny Tanks		
Project Number:	2020-MORRIS COUNTY-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather		
Description of the Problem:	After the tank inspection, 2 out of 15 tanks in the system located in Morris Township had broken rafters. In the event of a major snow storm, the roofs may collapse.		
Action or Project Intended for Implementation			
Description of the Solution:	Roof rafters at both the tanks need to be repaired or replaced.		
Is this project related to a Critical Facility or Lifeline?	Yes	X	No <input type="checkbox"/>
Level of Protection:	Depends on the size storm impacting the area	Estimated Benefits (losses avoided):	Reduce risk of water loss; protect infrastructure
Useful Life:	50 years	Goals Met:	2, 3, 5
Estimated Cost:	\$1 million	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	HIGH	Desired Timeframe for Implementation:	6 months
Estimated Time Required for Project Implementation:	4 year	Potential Funding Sources:	HMGP
Responsible Organization:	SMCMUA	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
	Rebuild tanks	\$5 million+	Costly; long-term project
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Structural Improvements at Highland Woods and Picatinny Tanks	
Project Number:	2020-MORRIS COUNTY-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project implementation will eliminate risk of impact on quality of life and property loss during next major flood event.
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	SMCMUA is the sole authority having jurisdiction of the well sites
Fiscal	1	Project would require new funding/grant source
Environmental	1	Proj. implementation may eliminate env. impacts during major flood
Social	0	No adverse social impacts
Administrative	1	Jurisdiction has personnel or administrative capabilities
Multi-Hazard	1	
Timeline	1	Project can be finished within next 12 months
Agency Champion	1	Project is supported by Board members from 4 Creating Municipalities (Morristown, Morris Township, Morris Plains & Hanover Twp.)
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power at Various Sites		
Project Number:	2020-MORRIS COUNTY-006		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	Currently no backup power supply at the mentioned sites below in Hanover Township. Potential power loss at major water supply sites in the system in the event of a natural hazard like flood or storm.		
Action or Project Intended for Implementation			
Description of the Solution:	Backup power generators required at the following sites: Wing Well, Todd Well, Black Brook Wells (all sites located in Hanover Township)		
Is this project related to a Critical Facility or Lifeline?	Yes	X	No <input type="checkbox"/>
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Continuity of operations
Useful Life:	15 years	Goals Met:	1, 2, 3, 5
Estimated Cost:	\$1,500,000	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	HIGH	Desired Timeframe for Implementation:	6 to 12 months
Estimated Time Required for Project Implementation:	12 months	Potential Funding Sources:	HMGP
Responsible Organization:	SMCMUA	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
	Install solar panels	\$15,000+	Weather dependent, not ideal for long term power outages, need space to install
	Install wind turbines	\$15,000+	Weather dependent, need space to install
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 at Various Sites	
Project Number:	2020-MORRIS COUNTY-006	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project implementation will eliminate risk of impact on quality of life during next major flood event.
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	SMCMUA is the sole authority having jurisdiction of the well sites
Fiscal	1	Project would require new funding/grant source
Environmental	1	Proj. implementation may eliminate env. impacts during major flood
Social	0	No adverse social impacts
Administrative	1	Jurisdiction has personnel or administrative capabilities
Multi-Hazard	1	
Timeline	1	Project can be finished within next 12 months
Agency Champion	1	Project is supported by Board members from 4 Creating Municipalities (Morristown, Morris Township, Morris Plains & Hanover Twp.)
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Clyde Potts Dam Spillway Improvement		
Project Number:	2020-MORRIS COUNTY-007		
Risk / Vulnerability			
Hazard(s) of Concern:	Dam Failure, Flood		
Description of the Problem:	The Clyde Potts Dam in Mendham Township has visible cracks observed in the dam spillway. Structural damage may result in flooding. Residential areas downstream of dam may get flooded. This is a high hazard dam with structural damage to the spillway which is causing capacity concerns.		
Action or Project Intended for Implementation			
Description of the Solution:	NJDEP Dam Safety Division has been currently engaged in a regional study for design flood analysis. Based on the results of the study, site specific study will be performed for the Clyde Potts Dam. The site specific study may require the size of the spillway to be evaluated and upgraded. The spillway design work is anticipated to be performed within 4 to 5 years.		
Is this project related to a Critical Facility or Lifeline?		Yes	X No <input type="checkbox"/>
Level of Protection:	To be determined after the site study of the dam	Estimated Benefits (losses avoided):	Spillway repair will reduce risk of dam failure and potential loss of life/property for areas downstream
Useful Life:	50 years	Goals Met:	2, 3, 5
Estimated Cost:	\$2,000,000	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	HIGH	Desired Timeframe for Implementation:	6 to 12 months
Estimated Time Required for Project Implementation:	4 to 5 years	Potential Funding Sources:	NJDEP Dam Restoration & Inland Water Projects Loan Program, FEMA High Hazard Potential Dam Grant Program
Responsible Organization:	SMCMUA	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
	Acquire all homes in the area of the dam and downstream	\$5 million+	Not feasible; not all homes are susceptible to flooding; costly; reduce tax base
	Elevate all homes in the area of the dam and downstream	\$5 million+	Not feasible; not all homes are susceptible to flooding; costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Clyde Potts Dam Spillway Improvement	
Project Number:	2020-MORRIS COUNTY-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project implementation will reduce/eliminate loss of life and property during next major flood event
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	SMCMUA is the sole authority having jurisdiction of the Dam
Fiscal	1	Project would require new funding/grant source
Environmental	1	Proj. implementation may eliminate env. impacts during major flood
Social	0	No adverse social impacts
Administrative	1	Jurisdiction has personnel or administrative capabilities
Multi-Hazard	1	
Timeline	1	Project can be finished within 5 years
Agency Champion	1	Project is supported by Board members from 4 Creating Municipalities (Morristown, Morris Township, Morris Plains & Hanover Twp.)
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Black Brook Wells and Treatment Plant Upgrade		
Project Number:	2020-MORRIS COUNTY-008		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Two groundwater wells and a treatment plant building are below flood elevation in Hanover Township. Loss of water service may happen in the event of a major flood.		
Action or Project Intended for Implementation			
Description of the Solution:	Upgrade of the wells and treatment plant buildings to raise them above the flood elevation.		
Is this project related to a Critical Facility or Lifeline?	Yes	X	No <input type="checkbox"/>
Level of Protection:	1% annual chance flood event	Estimated Benefits (losses avoided):	Raising the structure levels will eliminate risk of water service loss during a major flood.
Useful Life:	25 years	Goals Met:	2, 3, 5
Estimated Cost:	\$3,000,000	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	HIGH	Desired Timeframe for Implementation:	12 months
Estimated Time Required for Project Implementation:	2 to 3 years	Potential Funding Sources:	HMGP
Responsible Organization:	SMCMUA	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Capital Improvement
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocate the existing structure	\$5 million+	Not feasible; costly; need to find land to relocate structure
	Install generators at each pump	\$50,000+	Generators might not function properly during a flood; does not provide a long term solution
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Black Brook Wells and Treatment Plant Upgrade	
Project Number:	2020-MORRIS COUNTY-008	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project implementation will eliminate risk of property damage during next major flood event
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	SMCMUA is the sole authority having jurisdiction of the wells and TP building
Fiscal	1	Project would require new funding/grant source
Environmental	1	Proj. implementation may eliminate env. impacts during major flood
Social	0	No adverse social impacts
Administrative	1	Jurisdiction has personnel or administrative capabilities
Multi-Hazard	1	
Timeline	1	Project can be finished within 5 years
Agency Champion	1	Project is supported by Board members from 4 Creating Municipalities (Morristown, Morris Township, Morris Plains & Hanover Twp.)
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	