



9.11 TOWNSHIP OF EAST HANOVER

This section presents the jurisdictional annex for the Township of East Hanover. The annex includes a general overview of the Township of East Hanover; an assessment of the Township of East Hanover’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.

9.11.1 Hazard Mitigation Planning Team

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

Table 9.11-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Points of Contact
Ralph J. Tango, Jr, Consulting Engineer 411 Ridgedale Avenue, East Hanover, NJ 07936 973-398-3110 rtango@maserconsulting.com	Kevin Boyer, Consulting Engineer 411 Ridgedale Avenue, East Hanover, NJ 07936 973-398-3144 x 4558, cell: 908-809-2609 KBoyer@maserconsulting.com Carlo Dilizia, Health Officer, Dept. OEM Coordinator 411 Ridgedale Avenue, East Hanover, NJ 07936 973-888-6035 health.dept@easthanovertownship.com
NFIP Floodplain Administrator	
Ralph J. Tango, Jr, Consulting Engineer 411 Ridgedale Avenue, East Hanover, NJ 07936 973-398-3110 rtango@maserconsulting.com	

9.11.2 Jurisdiction Profile

The Township of East Hanover is located in southeast Morris County and covers a total area of 8.1 square miles. The boundaries of the Township are defined by the joining of two rivers, the Whippany River to the west and north and the Passaic River to the east and north.

According to the U.S. Census, the 2010 population for the Township of East Hanover was 11,157. The estimated 2017 population was 11,241, a 0.8 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 7.4% of the population is 5 years of age or younger and 21.2% 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.

9.11.3 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 9.11-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.



Table 9.11-2. Recent and Expected Future Development

Type of Development	2015	2016	2017	2018	2019
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single Family	8	4	7	6	4
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					
None					
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
None					

* Only location-specific hazard zones or vulnerabilities identified.

9.11.4 Capability Assessment

The Township of East Hanover 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.

PLANNING, LEGAL AND REGULATORY CAPABILITY

The table below summarizes the legal and regulatory tools that are available to the Township of East Hanover.

Table 9.11-3. Planning, Legal and Regulatory Capability

Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? 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	Local and State	Yes	No	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 Adopted 9/3/2019. Updated by Construction Code Official. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Zoning Code	Yes	Local	Yes, if have planning board	No	No
<i>Comment: State permissive on local level. [note local ordinance # and date of adoption]. 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. Updated by Zoning Official, Chapter 95, Land Use and Zoning.</i>					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
<i>Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Updated by Zoning Official, Chapter 95, Land Use and Zoning.</i>					
Stormwater Management	Yes	State and Local	Yes	No	No
<i>Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Updated 5/16/2012.</i>					
Post-Disaster Recovery	No	-	-	-	-
<i>Comment:</i>					
Real Estate Disclosure	Yes	State	Yes	No	No
<i>Comment: 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. Updated by the Division of Consumer Affairs, N.J.A.C. 13:43A-29.1.</i>					
Growth Management	Yes	Local and State	Yes, if have planning board	No	No
<i>Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Discussed in the Master Plan.</i>					
Shoreline Development	No	-	-	-	-
<i>Comment:</i>					
Site Plan Review	Yes	Local	Yes, if have planning board	No	No
<i>Comment: Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by county planning board and for the approval of those subdivisions affecting county road or drainage facilities. 40:27-6.10: Each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Updated by Zoning Official. Chapter 95, Land Use and Zoning.</i>					
Environmental Protection	Yes	Local	Yes	No	No
<i>Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.</i>					
Flood Damage Prevention	Yes	Local	No	No	No



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p><i>Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Part II, Flood Damage Prevention Chapter 87.</i></p>					
Wellhead Protection	Yes	Local	No	No	No
<p><i>Comment: Delineation of well head protection areas (WHPAs) is part of the NJ-approved 1991 well head protection plan (WHPP) for public community water supply wells. These are priority areas for efforts to prevent and clean up ground water contamination. Municipalities are empowered to regulate land use, physical facilities and other activities within WHPAs areas, the potential for groundwater contamination can be reduced under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes each municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents. Also refer to Safe Drinking Water Regulations (NJAC 7:10-11.7(b)1)). Part II Land Use and Zoning Chapter 95. 2004</i></p>					
Emergency Management	Yes	Local	Yes		
<p><i>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. See Emergency Operations Plans below.</i></p>					
Climate Change	No	-	-	-	-
<i>Comment:</i>					
Disaster Recovery Ordinance	No	-	-	-	-
<i>Comment:</i>					
Disaster Reconstruction Ordinance	No	-	-	-	-
<i>Comment:</i>					
Other: NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, and Local	Yes/No		
<p><i>Comment: Updated by Construction Code Official. Chapter 87, Flood Damage Protection Plan.</i></p>					
Other: NFIP Freeboard	Yes	State and Local	Yes/No		
<p><i>Comment: Updated by Construction Code Official. Chapter 87, Flood Damage and Prevention Plan.</i></p>					
Other: Municipal Separate Storm Sewer System (MS4)	Yes	State	Yes/No		
<p><i>Comment: Updated by Engineering, DPW.</i></p>					
Planning Documents					
Master Plan	Yes	Local	Municipal: Yes County: Yes		
<p><i>Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Updated by Land Use Planning Board (LUPB). 2005 Master Plan, in process of updating.</i></p>					
Capital Improvement Plan	Yes	Local	Allowed		
<p><i>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. Updated by Administration, 2014.</i></p>					
Disaster Debris Management Plan	No	-	-	-	-
<i>Comment:</i>					
Floodplain or Watershed Plan	Yes	Local	No		



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Updated 7/10/2012 by Floodplain Administrator; OEM working with all departments. Chapter 87, Flood Damage Protection Plan. Flood Acquisition Plan (with Morris County).					
Stormwater Management Plan	Yes	Local	Yes		
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). Stormwater Management Plan, May 2018.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes		
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). Stormwater Pollution Prevention Plan, May 2019.					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	No	-	-	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	Yes	Local	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.). Updated 2005 by LUPB. Economic Element within 2005 Master Plan.					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	No	-	-	-	-
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	Yes	Local	No		
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4). Updated 2005 by LUPB. Circulation Element within 2005 Master Plan.					
Agriculture Plan	No	-	-	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	-	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	-	-	-
Comment:					



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Business Development Plan	No	-	-	-	-
<i>Comment:</i>					
Other: Shade Tree commission	Yes	Shade tree commission	Allowed	No	No
<i>Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958.</i>					
Other - Historic Preservation	Yes	Shade tree commission	Allowed	No	No
<i>Comment: 40:32-6. Acquisition and preservation of historical buildings and data. Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.</i>					
Other: Open Space Plan	Yes	Local	Allowed	No	No
<i>Comment: Updated by LUPB. Open Space and Recreation Plan.</i>					
Other: Watershed Management or Protection Plan	Yes	Local, County	Yes	No	No
<i>Comment: Updated by LUPB. Chapter 162, Wetland Protection Plan ERI-Focusing on Protection of Water Resources of East Hanover.</i>					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local and County	Yes	No	No
<i>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. Updated by LUPB.</i>					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	-	-	-	-
<i>Comment:</i>					
Continuity of Operations Plan	Yes	Local	No	No	No
<i>Comment: Separate annex with EOP. Reviewed annually, updated every 5 years.</i>					
Public Health Plan	Yes	Local Public Health	No	No	No
<i>Comment: Separate annex within EOP. Reviewed annually and updated every 5 years.</i>					
Other: School Crisis Management Plan including Active Shooter Plan	Yes	Local	Allowed	No	No
<i>Comment:</i>					



Table 9.11-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning Board and Engineer
Does your jurisdiction have the ability to track permits by hazard area?	Yes
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.	No 90% built out

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

Table 9.11-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use Planning Board
Mitigation Planning Committee	Yes	Municipal Officials
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	Yes	SID-Special Improvement District/EH Community Partnership
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	SwiftReach
Maintenance program to reduce risk	Yes	Dept. of Public Works
Mutual aid agreements	Yes	Fire/Police/Health
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering Consultant- Maser Consulting
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering Consultant- Maser Consulting
Planners or engineers with an understanding of natural hazards	Yes	Engineering Consultant- Maser Consulting
Staff with training in benefit/cost analysis	Yes	OEM
Staff with training in green infrastructure	Yes	Engineering Consultant- Maser Consulting
Staff with education/knowledge/training in low impact development	Yes	Engineering Consultant- Maser Consulting
Surveyor	Yes	Engineering Consultant- Maser Consulting
Stormwater engineer	Yes	Engineering Consultant- Maser Consulting
Personnel skilled or trained in GIS applications	Yes	Engineering Consultant- Maser Consulting
Local or state water quality professional	Yes	Engineering Consultant- Maser Consulting
Scientist familiar with natural hazards in local area	Yes	Engineering Consultant- Maser Consulting
Emergency manager	Yes	OEM
Grant writers	Yes	Engineering Consultant- Maser Consulting
Resilience Officer	Yes	Engineering Consultant- Maser Consulting



Staff/Personnel Resource	Available?	Department/Agency/Position
Watershed planner	Yes	Engineering Consultant- Maser Consulting
Environmental specialist	Yes	Police and Fire
Drone Deployment	Yes	Engineering Consultant- Maser Consulting
Water Rescue Operation	Yes	OEM

FISCAL CAPABILITY

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

Table 9.11-6. 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- open space
User Fees for Water, Sewer, Gas or Electric Service	Yes water, sewer
Incur Debt through General Obligation Bonds	Yes
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	HMGP
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.11-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
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.	Yes OEM website provides info and link to County HMP
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Environmental Commission, Planning Board
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes SwiftReach, utility and tax bill mailings
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes SwiftReach, audible sirens, marquis on Ridgedale Avenue at the Municipal Building and Middle School

COMMUNITY CLASSIFICATIONS

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





Table 9.11-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	4	6/24/2019
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No		

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 municipality has access to resources to determine the possible impacts of climate change upon the municipality. The administration is supportive of integrating climate change in policies or actions. Climate change is not being integrated into current policies/plans or actions (projects/monitoring) within the municipality.

The table below summarizes the jurisdiction’s adaptive capacity rating for each hazard.

Table 9.11-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Dam Failure	Medium
Disease Outbreak	High
Drought	Medium
Earthquake	Medium
Extreme Temperatures	Medium
Flood	High
Geological Hazards	Low
Harmful Algal Bloom	Low
Hazardous Materials	High
Infestations)	Medium
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Notes:

High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement;

Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

NATIONAL FLOOD INSURANCE PROGRAM

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



Table 9.11-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (department/position)	Consulting Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	Consulting Engineer
Does your floodplain management program meet or exceed minimum requirements?	Meets
• If exceeds, in what ways?	n/a
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
• If so, state what they are.	n/a
Are any RiskMAP projects currently underway in your jurisdiction?	Yes
• If so, state what they are.	Reviewing FEMA maps from 2018
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
• If no, state why.	Updated maps do address
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
• If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)?	No
• If yes, is your jurisdiction interested in improving its CRS Classification?	n/a
• If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? ^a	154
• What is the insurance in force?	\$44,803,100.00
• What is the premium in force?	\$206,089.00
How many total loss claims have been filed in your jurisdiction? ^a	102
▪ How many claims are still open or were closed without payment?	0 Open, 20 Closed without payment
▪ What were the total payments for losses?	\$1,716,703.82
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No

Notes: Policies and Claims from <https://bsa.nfipstat.fema.gov/reports/1011.htm> and <https://bsa.nfipstat.fema.gov/reports/1040.htm> as of 09/30/2018.

ADDITIONAL AREAS OF EXISTING INTEGRATION

In the performance period since adoption of the 2015 HMP, the Township of East Hanover made progress on integrating hazard mitigation into other initiatives. The following plans and programs currently integrate components of the HMP and strategy:

- The East Hanover Legal Team is reviewing ordinances for opportunities.
- Designed Swift Water Rescue Plan.



9.11.5 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 East Hanover'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 9.11-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.11-11. 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	An impulse from the west coast traversed the midsection of the country, then developed into a low-pressure system as it tracked across the Gulf States before intensifying along the Carolina coast into a major nor'easter, producing record snowfall in parts of New Jersey on January 23rd. It then moved out to sea after passing by the mid-Atlantic coast early on January 24th. Wind gusts up to 60 MPH produced blizzard conditions as visibilities dropped to one-quarter mile or less in spots. Snowfall totals included 21.0 inches in Chatham.	PA Funding \$53,518.66
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 were 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.	PA Funding \$412,962.83



9.11.6 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 Township of East Hanover.

In an attempt to summarize the confidence level regarding the input utilized to populate the hazard ranking, a gradient of certainty was developed. A certainty factor of high, medium or low was selected and assigned to each hazard to provide a level of transparency and increased understanding of the data utilized 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 9.11-12. 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 is 1 dam 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:	11,055	NEHRP D&E:	4,779	100-year Loss:	\$0	High
		Liquefaction Class 4:	822	Liquefaction Class 4:	347	500-year Loss:	\$6,954,198	
						2,500-year Loss:	\$97,340,638	
Extreme Temperature	Extreme temperature event (heat or cold)	Over 65 Population:	2,388	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:	495					
Flood	100- and 500-Year Mean Return Period Event	100-year	495	100-year	218	100-year Loss:	\$193,643,609	High
		500-year	1,332	500-year	567			
Geological		Class A:	0	Class A:	0	Class A:	0	Moderate



Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
	High Landslide Susceptibility Areas and Areas developed over carbonate rock	Class B:	0	Class B:	0	Class B:	\$0	
		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:	\$76,369	High
						100 -Year Loss:	\$1,000,830	
						500-year Loss:	\$4,858,030	
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:	30	Wildfire:	17	Wildfire:	\$9,413,269	Moderate



REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of East Hanover.

- Number of repetitive loss (RL) properties: 7
- Number of severe repetitive loss (SRL) properties: 1
- 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.

Table 9.11-13. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
Givaudan Roure Flavors 1 Merry Lane	HAZMAT	x	x	2020-East Hanover-001
East Hanover Township DPW* 1 Melanie Lane	DPW	x	x	2020-East Hanover-002

Source: Morris County, 2019

* Identified lifeline

ADDITIONAL IDENTIFIED VULNERABILITIES

In the Township of East Hanover, flooding from the Passaic River and Whippany River occurs as a result of heavy rain in the summer and fall months, usually associated with localized thunderstorms and hurricanes. Due to the low permeability of certain soils within the Township, some areas are subject to frequent flooding and ponding of surface water during periods of heavy rain (FEMA FIS 2010).

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of East Hanover 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 East Hanover has significant exposure. Refer to Figures 9.11-1 and 9.11-2.

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; and 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. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Township of East Hanover. The Township of East Hanover 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 increased the ranking of dam failure from Low to Medium hazard of concern.

Table 9.11-14. Township of East Hanover Hazard Ranking Input

Dam Failure	Disease Outbreak	Drought	Earthquake	Extreme Temperature	Flood	Geological Hazard
Medium	High	Medium	Medium	Medium	High	Low

Harmful Algal Bloom	Hazardous Substances	Infestation	Severe Weather	Severe Winter Weather	Wildfire
Low	High	Medium	High	High	Low

9.11.7 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 9.11-15. 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 #
TEH-1 Backup power (generator) for School Facilities (shelter) (2).	Engineering	In progress. Purchased portable generator and installed temporary hookup for mobile generator. Permanent, stationary generator will be installed at the Middle School with current funding. Will be completed 2020.	Yes	2020-East Hanover-003
TEH-2 Storm water runoff system upgrade River Road.	Engineering	Complete. County upgraded River Road.	No	-
TEH-3 Support elevation/acquisition of Repetitive Loss properties on Dixon Lane (4), Brentwood (2), Mt. Pleasant (1) and other identified areas	OEM	In progress. FIPs are in review. Township is researching potential costs for acquisition. Continue with action.	Yes	2020-East Hanover-004



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 #
TEH-4 Develop all-hazards public education and outreach program for hazard mitigation and preparedness	Local OEM	Complete. OEM Website provides residents with emergency information and has links to Morris County HMP.	No	-
TEH-5 Create/ Enhance/ Maintain Mutual Aid agreements with neighboring communities for continuity of operations	Municipality	Complete. Police, Fire, EMS	No	-

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

- Instituted Drone Initiative to assist with investigations.
- Designed Swift Water Rescue Plan that included purchase of equipment and mobile command trailer.
- Expanded communication capabilities that included purchase of 12 new radios.
- Constructed Emergency Operations Center from repurposed court room.
- Designated Volunteer Fire Department Station 1 as a warming facility with backup power.
- Designated Ridgedale Middle School as a shelter and warming station holding about 500 and has a kitchen and showers. The school system is in the process of updating the backup power system.
- Designated East Hanover Recreation Center as a primary shelter holding about 150 and has a kitchen.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of East Hanover 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 East Hanover 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 9.11-16 summarizes the comprehensive range of specific mitigation initiatives the Township of East Hanover 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 9.11-17 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.



Table 9.11-16. 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-East Hanover-001	Givaudan Roure Flavors	Givaudan Roure Flavors is a hazardous materials facility in the floodplain.	Notify facility owner that the facility is in the flood plain.	Existing	Flood	1, 4	Engineering	Operating budget	Medium	Low	Short	Low	EAP	PI, PR
2020-East Hanover-002	DPW Flood Protection	East Hanover Township DPW is a critical facility identified as a lifeline in the floodplain.	Evaluate facility for flood risk and provide recommended mitigation actions.	Existing	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering	HMGP, FMA, PDM	High	High	Short	High	SIP	PP, PR
2020-East Hanover-003	Ridgedale Middle School	Ridgedale Middle School is a critical facility and lifeline that serves as a primary shelter.	Replace portable generator and temporary hookup with permanent generator.	New	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering, Schools	HMGP, PDM	High	Medium	Short	High	LPR	ES
2020-East Hanover-004	Support elevation/acquisition/mitigation of RL/SRL properties	Properties on Dixon Lane (4), Brentwood (2), Mt. Pleasant (1) and other areas are prone to flooding	Evaluate stormwater drainage on River Road and determine upgrade options.	Existing	Flood, Severe Storm	1, 5	Engineering	HMGP, PDM	High	High	Medium	High	SIP	PP
2020-East Hanover-005	East Hanover Twp Volunteer Fire Department	East Hanover Twp Volunteer Fire Department Station 2 is a critical facility and lifeline without backup power.	Design, purchase, and install generator.	New	Flood, Severe Storm, Severe winter weather, power outage	1, 4	Engineering	Capital budget, HMGP	High	Medium	Medium	Medium	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
2020-East Hanover-006	Central Elementary School	Central Elementary School is a shelter facility and lifeline without backup power.	Work with school district to design, purchase and install permanent, stationary generator.	New	Flood, Severe Storm, Severe winter weather, power outage	1, 4	Engineering	Capital budget, HMGP	High	Medium	Medium	Medium	SIP	PP, ES
2020-East Hanover-007	East Hanover Senior Citizens Center	East Hanover Senior Citizens Center is a critical facility without backup power.	Design, purchase, and install generator.	New	Flood, Severe Storm, Severe winter weather, power outage	1, 4	Engineering, School Administration	Capital budget, HMGP	High	Medium	Medium	Medium	SIP	PP, ES
2020-East Hanover-008	Camp Hope	Camp Hope is a critical facility and lifeline that serves as a secondary shelter to hold 150 with a kitchen but without backup power.	Design, purchase, and install generator.	New	Flood, Severe Storm, Severe winter weather, power outage	1, 4	Engineering	Capital budget, HMGP	High	Medium	Medium	Medium	SIP	PP, ES
2020-East Hanover-009	Triumph Development Corp Dam #3	Triumph Development Corp Dam #3 is in East Hanover.	Notify Triumph Development that Dam #3 is a critical facility in the floodplain. Update EOP to include dam.	Existing	Flood	1, 4	Engineering	Operating budget	Medium	Low	Short	Low	EAP	FS



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 9.11-17. Summary of Evaluation and Action Priorities

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-East Hanover-001	Givaudan Roure Flavors	0	1	0	0	0	1	0	0	1	0	0	1	0	0	4	Low
2020-East Hanover-002	DPW Flood Protection	0	1	1	1	1	1	0	1	0	0	1	0	0	1	9	High
2020-East Hanover-003	Ridgedale Middle School	1	1	0	1	1	1	0	0	1	1	1	0	0	1	9	High
2020-East Hanover-004	Support elevation/acquisition/mitigation of RL/SRL properties	1	1	1	1	1	1	0	1	0	0	1	0	0	0	9	High
2020-East Hanover-005	East Hanover Twp Volunteer Fire Department	1	1	0	1	1	1	0	0	1	0	1	0	0	1	8	Medium
2020-East Hanover-006	Central Elementary School	1	1	0	1	1	1	0	0	1	0	1	0	0	1	8	Medium
2020-East Hanover-007	East Hanover Senior Citizens Center	1	1	0	1	1	1	0	0	1	0	1	0	0	1	8	Medium
2020-East Hanover-008	Camp Hope	1	1	0	1	1	1	0	0	1	0	1	0	0	1	8	Medium
2020-East Hanover-009	Triumph Development Corp Dam #3	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	Low

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



Table 9.11-18. 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-East Hanover-009	2020-East Hanover-009	2020-East Hanover-009	2020-East Hanover-009	2020-East Hanover-009	2020-East Hanover-009	2020-East Hanover-009	2020-East Hanover-009
Disease Outbreak	-	-	-	-	-	-	-	-
Drought	-	-	-	-	-	-	-	-
Earthquake	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	-	001, 002, 003, 004, 005, 006, 007, 008	-	-	-
Extreme Temperature	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	-	001, 002, 003, 004, 005, 006, 007, 008	-	-	-
Flood	001, 002, 004	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 004	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 004	001, 002, 004	001, 002, 004
Geological	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	-	001, 002, 003, 004, 005, 006, 007, 008	-	-	-
Harmful Algal Bloom	-	-	-	-	-	-	-	-
Hazardous Substance	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	-	001, 002, 003, 004, 005, 006, 007, 008	-	-	-
Infestation	-	-	-	-	-	-	-	-
Severe Weather	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 004	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 004	001, 002, 004	001, 002, 004
Severe Winter Weather	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 004	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 004	001, 002, 004	001, 002, 004
Wildfire	-	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	-	001, 002, 003, 004, 005, 006, 007, 008	-	-	-

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

RED = high ranked hazard

ORANGE = medium ranked hazard

YELLOW = low ranked hazard



9.11.8 Staff and Local Stakeholder Involvement in Annex Development

The Township of East Hanover 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 9.11-19. Contributors to the Annex

Entity	Title	Method of Participation
Carlo DiLizio	Health Officer, Dept. OEM Coordinator, Alternate POC	Attended first and second annex meeting
Maria Bronzino	Deputy OEM Coordinator	Attended first and second annex meeting
Kevin Boyes	Township Engineer	Attended second annex meeting
John Centanni	OEM Coordinator	Attended second annex meeting
Marc Macaluso	Superintendent Public Works	Attended second annex meeting
Thomas Pershouse	Construction Officer	Attended second annex meeting
Linoa Lurz	Superintendent of Recreation	Attended second annex meeting
Carmine Davino	Fire Chief	Attended second annex meeting



Figure 9.11-1. Township of East Hanover Hazard Area Extent and Location Map 1

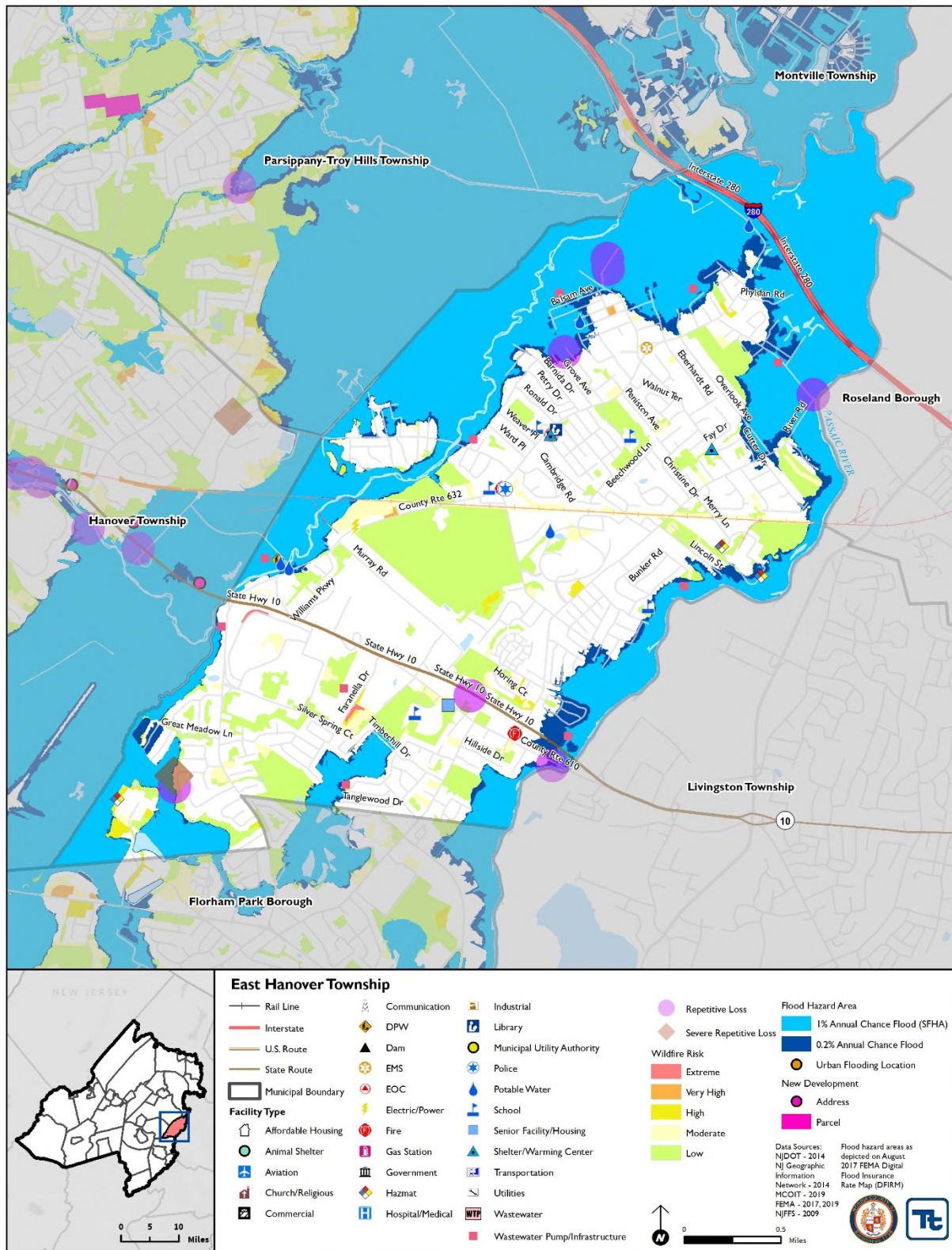
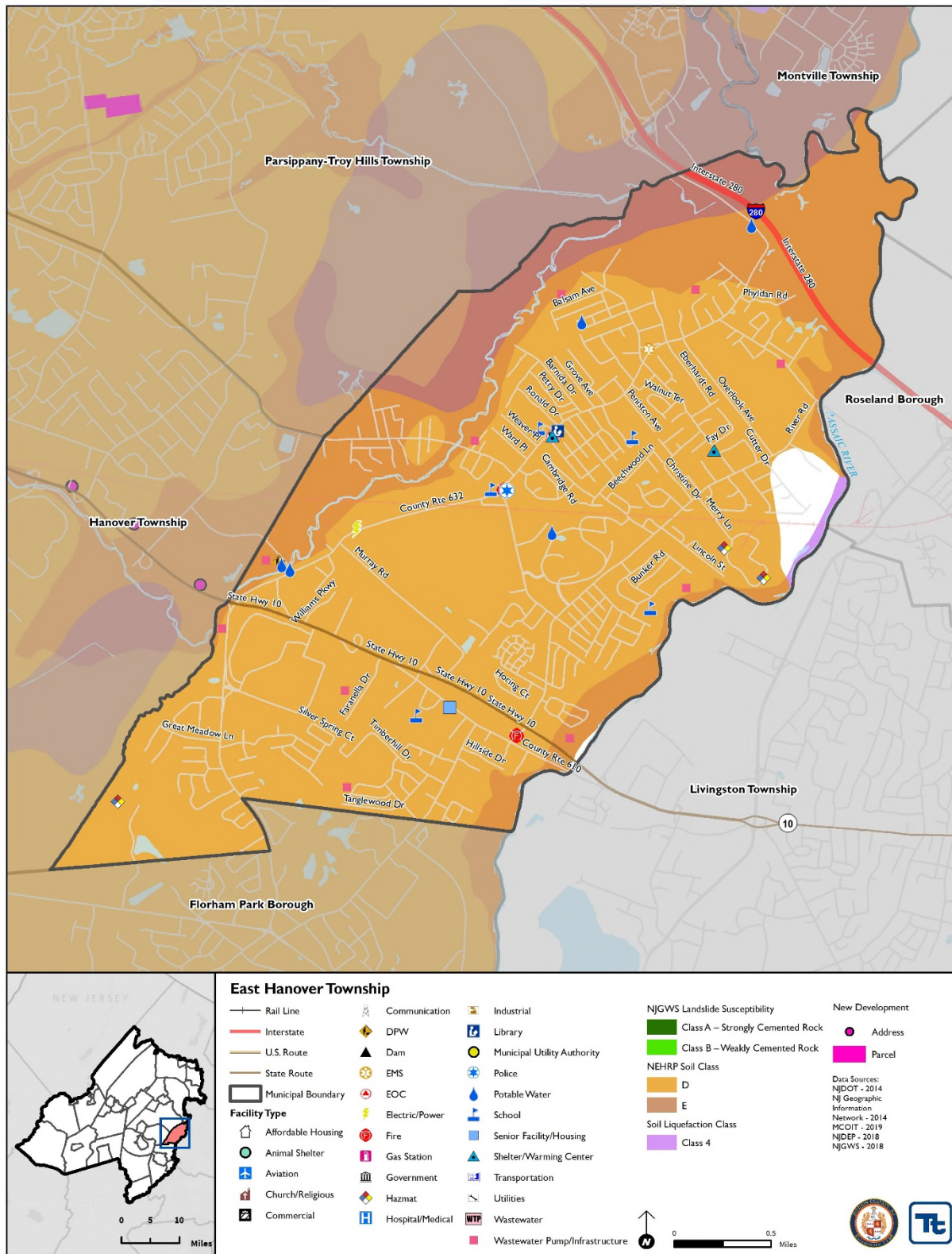




Figure 9.11-2. Township of East Hanover Hazard Area Extent and Location Map 2





Name of Jurisdiction:

Township of East Hanover

Name and Title Completing Worksheet:

Ralph J. Tango, Township Engineer

Action Worksheet			
Project Name:	DPW Flood Protection		
Project Number:	East Hanover-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Flooding events impact operation of DPW, a lifeline, and DPW employees.		
Description of the Solution:	Research potential flood protection measures, such as walls. Study required to identify appropriate flood protection measures that would mitigate the risk.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year event	Estimated Benefits (losses avoided):	High
Useful Life:	TBD	Goals Met:	1
Estimated Cost:	TBD	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	3-4 years	Potential Funding Sources:	FEMA, HMGP, FMA
Responsible Organization:	NFIP FPA	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 flood protection	Medium	Mitigate risk
	Relocate DPW	High	Cost prohibitive
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Name of Jurisdiction:

Township of East Hanover

Name and Title Completing Worksheet:

Ralph J. Tango, Township Engineer

Action Worksheet		
Project Name:	DPW Flood Protection	
Project Number:	East Hanover-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	Allow DPW to operate unimpeded
Property Protection	1	During floods to assist residents
Cost-Effectiveness	1	More effective than relocation
Technical	1	Potential to reduce flooding
Political	1	Need to determine whether access is an issue
Legal	1	Municipality has potential to address the issue
Fiscal	0	
Environmental	1	
Social	0	
Administrative	0	0
Multi-Hazard	1	Flood prevention, severe storm, lifeline
Timeline	0	
Agency Champion	0	
Other Community Objectives	1	DPW can organize without disruption
Total	8	
Priority (High/Med/Low)	Medium	



Name of Jurisdiction:

Township of East Hanover

Name and Title Completing Worksheet:

Ralph J. Tango, Township Engineer

Action Worksheet			
Project Name:	Dixon/ Brentwood Area RL/SRL Properties		
Project Number:	2020-East Hanover-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Utility Flood, Severe Storm		
Description of the Problem:	Damage to flood-prone properties within residential neighborhoods		
Action or Project Intended for Implementation			
Description of the Solution:	Research flood history to determine appropriate approach to purchase or elevate properties.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD	Estimated Benefits (losses avoided):	Eliminates property losses
Useful Life:	Acquisition: Lifetime Elevation: 30 years	Goals Met:	1, 5
Estimated Cost:	TBD (\$2-2.5 M)	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1-2 years
Estimated Time Required for Project Implementation:	3-4 years	Potential Funding Sources:	FEMA, HMGP, FMA, residents
Responsible Organization:	NFIP FPA	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	TBD	Raise homes if practical
	Acquisition	TBD	Purchase properties
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Name of Jurisdiction:

Township of East Hanover

Name and Title Completing Worksheet:

Ralph J. Tango, Township Engineer

Action Worksheet		
Project Name:	Dixon/ Brentwood Area RL/SRL Properties	
Project Number:	2020-East Hanover-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Remove residents from flood prone areas
Property Protection	1	Remove / elevate flood-prone properties
Cost-Effectiveness	1	Better than losses to residents
Technical	1	Potentially feasible
Political	1	
Legal	1	Municipality has authority to address project
Fiscal	0	
Environmental	1	Remove exposure from flood prone areas
Social	0	
Administrative	0	
Multi-Hazard	1	Flood, severe storm
Timeline	0	
Agency Champion	1	NFIP FPA
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	