



9.6 TOWNSHIP OF CHATHAM

This section presents the jurisdictional annex for the Township of Chatham. The annex includes a general overview of the Township of Chatham; an assessment of the Township of Chatham'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.

9.6.1 Hazard Mitigation Planning Team

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

Table 9.6-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name / Title: Kevin Sullivan, OEM Coordinator Address: 58 Meyersville Road, Chatham, New Jersey 07928 Phone Number: 973-908-1321 Email: ksullivan@chathamtownship-nj.gov	Name / Title: John Ruschke, Project Mgr/Engineer Address: 58 Meyersville Road, Chatham, New Jersey 07928 Phone Number: 908-238-5000 Email: john.ruschke@mottmac.com
NFIP Floodplain Administrator Name / Title: John Ruschke, Project Mgr/Engineer Address: 58 Meyersville Road, Chatham, New Jersey 07928 Phone Number: 908-238-5000 Email: john.ruschke@mottmac.com	

9.6.2 Jurisdiction Profile

The Township of Chatham is a suburban municipality located in southeastern Morris County. The western portions of the Township are located within the Great Swamp Wildlife Refuge and southern boundary of the Township borders the Passaic River and third Watchung Mountain Ridge. The west side of the Township located in the Great Swamp is largely undeveloped. Most of the Township's development exist on the eastern side of the municipality closer to County Route 646 and 638 and is mostly residential in nature. Adjacent municipalities include the Borough of New Providence to the south, The City of Summit to the southeast, and the Borough of Chatham to the east, the Borough of Madison to the northeast, and Harding and Long Hill Townships to the west. The Township has a total area of 9.36 square miles, of which 8.98 square miles is land and 0.38 square miles is water.

According to the U.S. Census, the 2010 population for the Township of Chatham was 10,452. The estimated 2017 population was 10,507, a 0.5 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 4.7 percent of the population is 5 years of age or younger and 16.1 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.6.3 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 9.6-2 summarizes recent and expected future development trends, including major residential/commercial



development and major infrastructure development. Figures 9.6-1 and 9.6-2 at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development.

Table 9.6-2. 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	0	0	0	1	0
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					
Gunn Development	Residential	9 units	Long View Avenue	None	In progress
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Dixie Dale	Residential	53 units	Hillside Avenue	None	In permitting
Arbor Green	Residential	24 units	Southern Boulevard	None	In permitting

* Only location-specific hazard zones or vulnerabilities identified.

9.6.4 Capability Assessment

The Township of Chatham 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 Chatham.



Table 9.6-3. Planning, 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	-	-
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. Chatham Township General Ordinance, Chapter XI, Building and Housing.					
Zoning Code	Yes	Local	Yes, if have planning board	-	-
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. Chatham Township Land Development Chapter XXX, Article 5, 30 -40					
Subdivisions	Yes	Local	Yes, if have planning board	-	-
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. Chatham Township Land Development Chapter XXX, Article 6, 30 – 60 Filing Procedures					
Stormwater Management	Yes	State and Local	Yes	-	-
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Chatham Township Land Development Chapter XXX, Article 7, 30-83					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
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.					
Growth Management	No	Local and State	Yes, if have planning board	-	-
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.					
Shoreline Development	No	-	No	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	No	Local	Yes, if have planning board	-	-
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					



	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 #.
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.					
Environmental Protection	No	-	No	-	-
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.					
Flood Damage Prevention	Yes	Federal, State, Local	No	-	-
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. Township of Chatham Article X Flood Damage Prevention and Flood Hazard Area Regulations.					
Wellhead Protection	No	-	No	-	-
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)).					
Emergency Management	Yes/No	Local	Yes	-	-
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.					
Climate Change	Yes/No		No	-	-
Comment:					
Disaster Recovery Ordinance	Yes/No		No	-	-
Comment:					
Disaster Reconstruction Ordinance	Yes/No		No	-	-
Comment:					
Steep Slope Ordinance	Yes	Local	No	No	No
Comment: Chapter 30 Div VII Section 30-96.24 Steep Slopes Protection.					
Planning Documents					
Master Plan	Yes	Local	Yes	Yes	Yes
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); Authority of the Planning Board. Can integrate with reference to County HMP in next update. The last Master Plan Reexamination Report is from 2006. Land Use Plan is from 2011.Mitigation Action 2020-Chatham T-001.					
Capital Improvement Plan	Yes	Who is responsible organization?	Allowed	No	No
Comment: Per NJSA 40:55D-29) the governing body is authorized to direct the planning board to prepare a CIP with at least a six year planning horizon.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332)					



	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 #.
Stormwater Management Plan	Yes	Local, State	Yes	No	No
<i>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). Authority is the Planning Board. Published 2005 as Section 10 of the Master Plan.</i>					
Stormwater Pollution Prevention Plan	No	Local, State	Yes	No	No
<i>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). The Township's Stormwater Pollution Prevention Plan is required to be posted to the Township's website.</i>					
Urban Water Management Plan	No	-	No	-	-
<i>Comment:</i>					
Habitat Conservation Plan	No	-	No	-	-
<i>Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).</i>					
Economic Development Plan	No	-	No	-	-
<i>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.)</i>					
Shoreline Management Plan	No	-	No	-	-
<i>Comment:</i>					
Community Wildfire Protection Plan	No	-	No	-	-
<i>Comment:</i>					
Community Forest Management Plan	No	-	No	-	-
<i>Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).</i>					
Transportation Plan	Yes	Local	No	-	-
<i>Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4). Element of the Master Plan Section 5 Circulation 1999 and Walkway/Bikeway Plan 2009.</i>					
Agriculture Plan	No	-	No	-	-
<i>Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).</i>					
Climate Action Plan	No	-	No	-	-
<i>Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).</i>					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other: Shade Tree commission	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</i>					



	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 #.
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.					
Other - Historic Preservation	No	-	No	-	-
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. Master Plan Section 11 Historic Preservation 1999.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.6-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning board
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 Township is fully built out

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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



Table 9.6-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Construction Department
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Chatham Township Environmental Commission
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Police, Fire, EMS
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer and Town Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer and Town Planner
Planners or engineers with an understanding of natural hazards	Yes	Engineer and Town Planner
Staff with training in benefit/cost analysis	Yes	Engineer and Town Planner
Staff with training in green infrastructure	Yes	Engineer and Town Planner
Staff with education/knowledge/training in low impact development	Yes	Engineer and Town Planner
Surveyor	Yes	Engineer and Town Planner
Stormwater engineer	Yes	Engineer and Town Planner
Personnel skilled or trained in GIS applications	Yes	Engineer and Town Planner
Local or state water quality professional	Yes	Engineer and Town Planner
Scientist familiar with natural hazards in local area	Yes	Engineer and Town Planner
Emergency manager	Yes	OEM
Grant writers	No	-
Resilience Officer	No	-
Watershed planner	Yes	Engineer and Town Planner
Environmental specialist	Yes	Engineer and Town Planner
Other	No	-

FISCAL CAPABILITY

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

Table 9.6-6. Fiscal Capabilities

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



Financial Resource	Accessible or Eligible to Use?
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)	Yes
Other	No

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.6-7. 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, consultant
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, OEM website
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, Facebook, Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes, Environmental Commission, Open Space Committee, Board of Health, Planning Board, Zoning Board
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes, quarterly tax bills, ACTNOW alerts through RAVE
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, RAVE, Special Needs Registry

COMMUNITY CLASSIFICATIONS

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

Table 9.6-8. Community Classifications

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

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 Township of Chatham 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 adaptive capacity for each hazard and the jurisdiction's rating.

Table 9.6-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Dam Failure	Low
Disease Outbreak	Low
Drought	Low
Earthquake	Medium
Extreme Temperature	Medium
Flood	Low
Geological	High
Harmful Algal Bloom	Low
Hazardous Substance	Medium
Infestation	Low
Severe Weather	High
Severe Winter Weather	Low
Wildfire	Low
Hazardous Materials	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 9.6-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Engineering Contractor/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?	2004
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	10/18/18
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes



Criterion	Response
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<input type="checkbox"/> If so, what type of assistance/training is needed?	N/a
Does your jurisdiction participate in the Community Rating System (CRS)?	No
<ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	No
How many flood insurance policies are in force in your jurisdiction?*	45
<ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	\$12,471,200 \$35,400
How many total loss claims have been filed in your jurisdiction?*	22
<ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	0 open, 11 w/o pymt \$104,523
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

* Note: 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 Chatham was certified by Sustainable Jersey as Bronze on October 05, 2018, established backup power to the Municipal Building, developed the Chatham Township Emergency Management website for public education and outreach program for hazard mitigation and preparedness, established a tree removal & maintenance program, and mapped the sanitary sewer lines.

9.6.5 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 Chatham'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 9.6-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.6-11. 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	The Township did not report any losses for this event.



Date(s) of Event	Event Type (disaster declaration if applicable)	Morris County Designated?	Summary of Event	Summary of Local Damages and Losses
			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.	
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.	The Township did not report any losses for this event.

9.6.6 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 Chatham.

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 9.6-12. 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:	5,628	NEHRP D&E:	2,448	100-year Loss:	\$0	High
		Liquefaction Class 4:	572	Liquefaction Class 4:	258	500-year Loss:	\$3,182,831	
						2,500-year Loss:	\$46,109,277	
Extreme Temperature	Extreme temperature event (heat or cold)	Over 65 Population:	1,691	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:	273					
Flood	100- and 500-Year Mean Return Period Event	100-year	67	100-year	28	100-year Loss:	\$8,632,360	High
		500-year	67	500-year	29			
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:	240	Class B:	78	Class B:	\$63,220,964	
		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:	\$58,837	High
						100 -Year Loss:	\$692,144	
						500-year Loss:	\$3,825,302	
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:	32	Wildfire:	11	Wildfire:	\$6,568,775	Moderate



REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Chatham:

- Number of repetitive loss (RL) properties: 1
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

Source: FEMA BureauNet, 2019

Note: RL and SRL as of 04/26/2019

CRITICAL FACILITIES

There are no critical facilities in the community located in the 1-percent and 0.2-percent floodplain in the Township of Chatham.

Table 9.6-13. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
There are no critical facilities or lifelines in the floodplain.				

ADDITIONAL IDENTIFIED VULNERABILITIES

According to the 2010 preliminary FEMA Flood Insurance Study (FIS) for Morris County, flooding occurs in the Green Village/Britten Road area from Loantaka Brook in the Township of Chatham. The height of floodwater diminishes below Green Village Road as water spreads out into a section of the Great Swamp between Britten and Meyersville Roads. The Black Brook floods regularly in the vicinity of several houses as it crosses Green Village Road. The Great Swamp and the Millington Gorge affect the flow of the Passaic River. The Great Swamp acts as a storage area, while the Millington Gorge restricts the passage of flood levels (FEMA FIS 2010).

The jurisdiction has identified the following vulnerabilities within their community:

- Backyard drainage swale on Candace Lane not at sufficient capacity.
- Backyard drainage swale Runnymede Road not at sufficient capacity.
- Backyard drainage swale Susan Drive not at sufficient capacity.
- Backyard drainage swale Sunset Drive not at sufficient capacity.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Chatham 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 Chatham has significant exposure. Refer to Figures 9.6-1 and 9.6-2.

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 Chatham. The Township of Chatham was provided with 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.

Table 9.6-14. Township of Chatham Hazard Ranking Input

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

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

9.6.7 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 9.6-15. 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 #
Chatham Twp - 1 Backup power (generator) for Municipal Building.	OEM	Completed	No	-
Chatham Twp - 2 Develop all-hazards public education and outreach program for hazard mitigation and preparedness	OEM	Complete. Information provided on website Office of Emergency Management webpage, social media, Alerts, Special Needs Registry, and CERT program.	No	-
Chatham Twp - 3 Tree Removal & Maintenance	OEM	In progress: JCPL has Provided tree trimming. DPW trims too. Would like to	Yes	2020-Chatham T-002



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 #
		educate on planting the right tree in the right place. Potential ordinance change.		
Chatham Twp - 4 Treatment Plant Maintenance & Upgrades for Large Storm Events	OEM	Ongoing maintenance, facilities are not in 100-year floodplain or are elevated above the BFE: I&I study, Sanitary Sewer lines mapped to see if catch basins are in the floodplain	No	-
Chatham Twp - 5 Catch Basin & General Storm Water Facility Maintenance	OEM	In progress: Develop GIS of the MS4 system, including catch basins	Yes	2020-Chatham-003
Chatham Twp - 6 Revamped and improved OEM Web page	OEM	Complete: OEM website was developed	No	-

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

- Installed a larger generator at the WWTP. The previous generator was not operating auxiliary functions, and now the entire plant is covered for backup power.
- Installed a backup generator for the River Road FD, as purchased by Township of Chatham.
- Closed treatment plant and reused as pump station. Discharge rerouted to main treatment plant.
- Installed new covered salt shed.
- Portable diesel fuel tank (1,000 gal) for emergency generators (3 pump stations, WWTP, muni buildings, FDs).
- Installed 1,000 gal secondary gasoline tank for emergency vehicles.
- Extended municipal drainage on Woodlawn Drive to mitigate insufficient drainage.
- Established the municipal building at 58 Meyersville Road as a warming station with backup power.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Chatham 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 Chatham was invited to participate 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 9.6-16 summarizes the comprehensive range of specific mitigation initiatives the Township of Chatham 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 9.6-17 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.



Table 9.6-16. 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-Chatham T-001	Master Plan Update	Master plan update provides opportunity to incorporate hazard mitigation.	Incorporate hazard mitigation information into next update of the master plan.	Existing	All	1, 2, 4	Planning board, Engineering	Municipal budget	Medium	Low	Short	Medium	LPR	PR
2020-Chatham T-002	Tree Removal & Maintenance	JCPL has Provided tree trimming. DPW trims too. Trees need to be replanted without compromising power lines safety.	Educate staff and residents on planting the right tree in the right place. The environmental commission should evaluate for potential tree ordinance change.	New	All	1, 2, 4	Engineering, DPW, Environmental Commission	Municipal budget	High	Medium	Short	High	SIP	PR, PP
2020-Chatham T-003	Catch Basin & General Storm Water Facility Maintenance	Catch Basin & General Storm Water Facility Maintenance	Develop GIS of the MS4 system, including catch basins	Existing	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering, Administration	Municipal budget	High	Medium	Short	Medium	SIP	PP, SP
2020-Chatham T-004	River Road RL Mitigation	Township has 1 RL property on River Road in the floodplain.	Discuss mitigation options with the owner of the RL property, and if interested in applying for a grant, submit a grant application to implement mitigation measures.	Existing	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering, Administration	Municipal budget, HMGP, PDM	High	Medium	Short	Medium	SIPm EAP	PP, SP, PI
2020-Chatham T-005	Candace Lane drainage	Backyard drainage swale on Candace Lane not at	Perform drainage study of Candace Lane and implement	Existing	Flood, Severe Storm, Severe	1, 4	Engineering, Administration	Municipal budget, HMGP, PDM	High	Medium	Short	Medium	SIP	PP, SP



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
		sufficient capacity.	mitigation actions.		Winter Weather									
2020-Chatham T-006	Runnymede Road drainage	Backyard drainage swale Runnymede Road not at sufficient capacity.	Perform drainage study of Runnymede Road and implement mitigation actions.	Existing	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering, Administration	Municipal budget, HMGP, PDM	High	Medium	Short	Medium	SIP	PP, SP
2020-Chatham T-007	Susan Drive drainage	Backyard drainage swale Susan Drive not at sufficient capacity.	Perform drainage study of Susan Drive and implement mitigation actions.	Existing	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering, Administration	Municipal budget, HMGP, PDM	High	Medium	Short	Medium	SIP	PP, SP
2020-Chatham T-008	Sunset Drive drainage	Backyard drainage swale Sunset Drive not at sufficient capacity.	Perform drainage study of Sunset Drive and implement mitigation actions.	Existing	Flood, Severe Storm, Severe Winter Weather	1, 4	Engineering, Administration	Municipal budget, HMGP, PDM	High	Medium	Short	Medium	SIP	PP, SP

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 9.6-17. 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-Chatham T-001	Master Plan Update	0	1	1	1	0	0	0	0	0	1	1	0	0	0	5	Medium
2020-Chatham T-002	Tree Removal & Maintenance	1	1	1	1	1	0	1	0	0	1	1	1	1	1	11	High
2020-Chatham T-003	Catch Basin & General Storm Water Facility Maintenance	0	1	1	1	1	0	1	1	0	1	1	1	1	1	11	High
2020-Chatham T-004	River Road RL Mitigation	1	1	1	1	0	0	0	0	1	1	1	0	0	0	7	Medium
2020-Chatham T-005	Candace Lane drainage	1	1	1	1	0	0	0	0	1	1	1	0	0	0	7	Medium
2020-Chatham T-006	Runnymede Road drainage	1	1	1	1	0	0	0	0	1	1	1	0	0	0	7	Medium



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-Chatham T-007	Susan Drive drainage	1	1	1	1	0	0	0	0	1	1	1	0	0	0	7	Medium
2020-Chatham T-008	Sunset Drive drainage	1	1	1	1	0	0	0	0	1	1	1	0	0	0	7	Medium



Table 9.6-18. 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	001, 003	001, 003	001, 002, 003, 004	001, 002, 003	001, 003	003	001, 003	001, 003
Disease Outbreak	-	-	001	-	001	-	-	-
Drought	-	-	001	-	001	-	-	-
Earthquake	-	-	001	-	001	-	-	-
Extreme Temperature	-	-	001	-	001	-	-	-
Flood	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008
Geological	-	001	001	-	001	-	-	-
Harmful Algal Bloom	-	001	001	-	001	-	-	-
Hazardous Substance	-	001	001	-	001	-	-	-
Infestation	-	001	001	-	001	-	-	-
Severe Weather	-	001	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008
Severe Winter Weather	-	001	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008	002, 003, 004, 005, 006, 007, 008	001, 002, 003, 004, 005, 006, 007, 008
Wildfire	001	001	001	001	001	-	001	001

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

9.6.8 Staff and Local Stakeholder Involvement in Annex Development

The Township of Chatham 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 9.6-19. Contributors to the Annex

Entity	Title	Method of Participation
Kevin Sullivan	OEM Coordinator, Primary POC	Attended first annex meeting, reviewed annex and contributed to annex development.
John Ruschke	Township Engineer	Attended first annex meeting, reviewed annex and contributed to annex development.

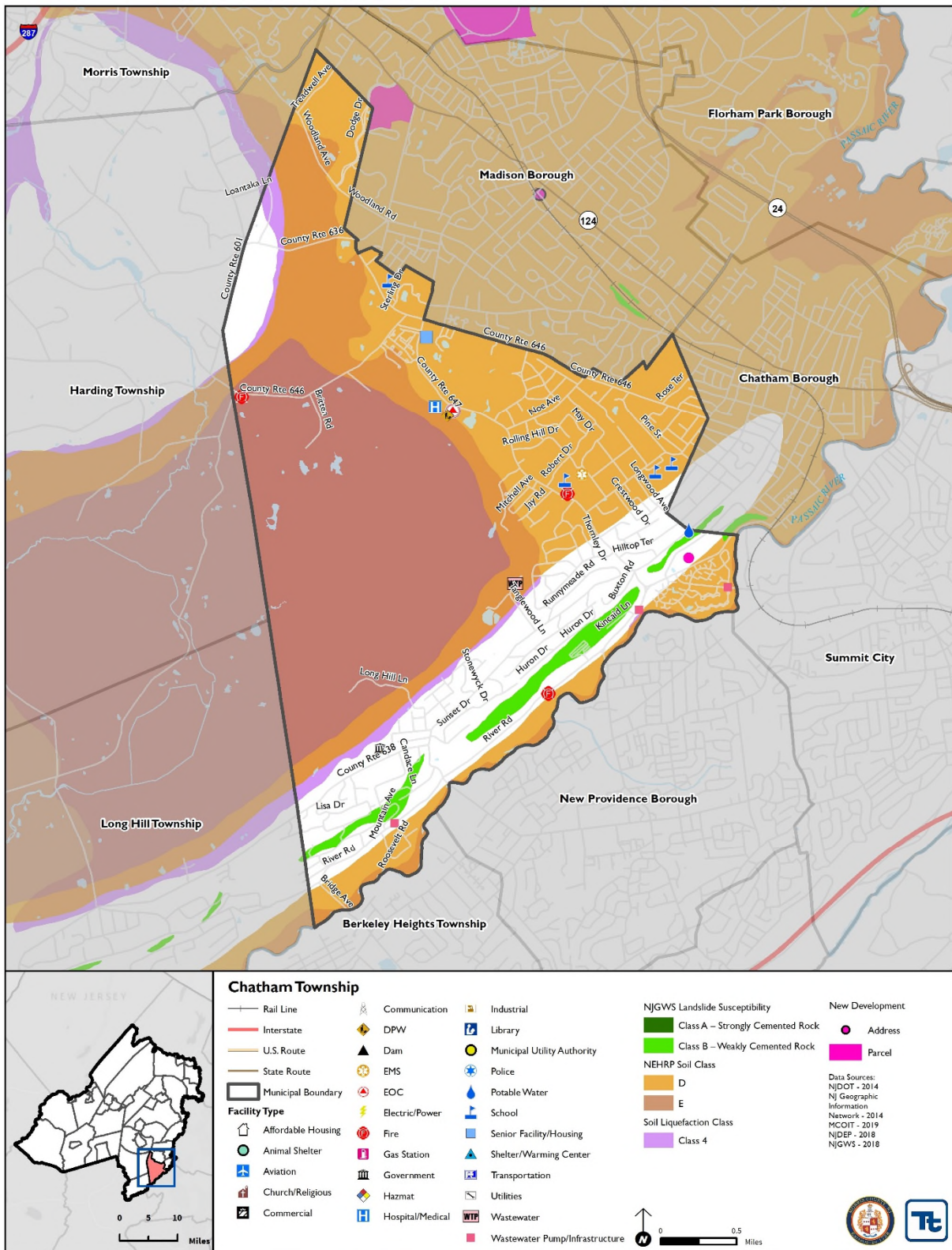


Figure 9.6-1. Township of Chatham Hazard Area Extent and Location Map 1





Figure 9.6-2. Township of Chatham Hazard Area Extent and Location Map 2





Action Worksheet			
Project Name:	Tree Removal & Maintenance		
Project Number:	2020-Chatham-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storms, Severe Winter Storms		
Description of the Problem:	JCPL has Provided tree trimming. DPW trims too. Trees need to be replanted without compromising power lines safety.		
Action or Project Intended for Implementation			
Description of the Solution:	Educate staff and residents on planting the right tree in the right place. The environmental commission should evaluate for potential tree ordinance change. Determine participation under the Community Forestry Assistance Act to develop a Community Forestry Management Plan.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	High. Mitigates the potential loss of life, property damage, and the effective functioning of our first responders through limiting road closures.
Useful Life:	TBD	Goals Met:	1, 4
Estimated Cost:	Medium	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	Short	Potential Funding Sources:	Municipal budget, csip grant
Responsible Organization:	Township Engineer, DPW, Environmental Commission	Local Planning Mechanisms to be Used in Implementation if any:	n/a
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Manage trees and limbs	Medium	Mitigates tree risk prior to events
	Chop down all town trees	High	Not cost effective
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

Action Worksheet	
Project Name:	Tree Removal & Maintenance



Project Number:	2020-Chatham-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will protect lives or prevent injuries by taking this preventive action.
Property Protection	1	Will help prevent or minimize property damage.
Cost-Effectiveness	1	Cost effective relative to the damage and disruptions it may cost without doing
Technical	1	Technically feasible and provide a long-term benefit.
Political	1	Supported unanimously
Legal	0	
Fiscal	1	Funded locally, enhanced effort with grants
Environmental	0	
Social	0	
Administrative	1	Administratively can be handled
Multi-Hazard	1	
Timeline	1	Can be accomplished quickly, but is continuous
Agency Champion	1	
Other Community Objectives	1	Enhances community emergency operations efforts
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Catch Basin & General Storm Water Facility Maintenance		
Project Number:	2020-Chatham T-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm, Severe Winter Weather		
Description of the Problem:	Catch Basin & General Storm Water Facility Maintenance		
Action or Project Intended for Implementation			
Description of the Solution:	Develop GIS of the MS4 system, including catch basins. Implement stormwater maintenance plan. Develop webpage for stormwater management, including stormwater management plan, stormwater pollution prevention plan, and stormwater management ordinances.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	High. Reduce potential flooding and improve environmentally sensitive areas to surrounding storm water run-off.
Useful Life:	TBD	Goals Met:	1, 4
Estimated Cost:	Medium	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	Short	Potential Funding Sources:	Municipal budget
Responsible Organization:	Engineering, DPW	Local Planning Mechanisms to be Used in Implementation if any:	Stormwater management, hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Improve existing infrastructure and implement programs	Medium	Cost effective solution
	No other feasible options were identified for this project	n/a	n/a
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Catch Basin & General Storm Water Facility Maintenance	
Project Number:	2020-Chatham T-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Will help prevent or minimize property damage.
Cost-Effectiveness	1	Cost effective relative to the damage and disruptions it may cost without doing
Technical	1	Technically feasible and provide a long-term benefit.
Political	1	Supported
Legal	0	
Fiscal	1	Funded locally, enhanced effort with grants
Environmental	1	Will comply with all Federal, State and local requirements
Social	0	
Administrative	1	Administratively can be handled
Multi-Hazard	1	
Timeline	1	Can be accomplished short term and continuous into the future
Agency Champion	1	
Other Community Objectives	1	Capital improvement, environmental quality improvements
Total	11	
Priority (High/Med/Low)	High	