



## 9.23 Township of Moorestown

This section presents the jurisdictional annex for the Township of Moorestown.

### 9.23.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Chief Lee Lieber, Police Chief / OEM Coordinator 111 West Second Street, Moorestown, NJ 08057 856.914.3041 llieber@moorestownpd.com	Anthony Zappasodi, Director of Community Development 111 West Second Street, Moorestown, NJ 08057 856.914.3021 azappasodi@moorestown.nj.us

### 9.23.2 Municipal Profile

Although there were property owners as early as 1680 in the present township location, (formerly known as Chester Township), the Village of was 'founded' in 1682 when the first owners-built homes and actually lived here. Thomas Hooton and son acquired 600 acres in 1682.

Thomas Moore and his wife Elizabeth settled in 1722 and in 1732, Moore purchased 33 acres of land on the north side of The King's Highway. Mr. Moore set up a hotel on the northwest corner of The King's Highway and Union Streets. With so much land eventually being owned by Thomas Moore, the name Moorestown gradually replaced Chester informally in what is now the center of town. Finally, Moorestown formerly split off from Chester and became a Township.

Although Moorestown is over 300 years old, it was incorporated by an act of the NJ State Legislature approved on March 11, 1922. That is from Chapter 68 of the Laws of 1922 published in the 'Acts of the One Hundred and Forty-seventh Legislature of the State of New Jersey and Seventy-ninth Under the New Constitution' MacCrellish & Quigley Co., State Printers, Trenton, N.J., 1923. <sup>1</sup>

The Township of Moorestown is governed under the Council-Manager (Faulkner Act) form of government. Under this form, a five-member Council is elected at large on a partisan basis. Each member is elected for a 4-year term, on an overlapping basis. The council is the legislative body of the municipality but also appoints the positions of Municipal Clerk, Tax Assessor and well as provides for appointments of members of Boards. Perhaps most importantly, the council appoints a qualified manager to serve as the chief executive.

The mayor is selected by the council members. Either way, the mayor serves as the presiding member of the council. The Manager has the full administrative responsibility for the municipality, including appointment of department heads as well as subordinates, preparation and presentation of the budget and the negotiation of contracts. <sup>2</sup>

The Township of Moorestown is located in the northwestern portion of Burlington County and encompasses 16.1 square miles. The Township is bordered by Mount Laurel to the south, Maple Shade to the west, Cinnaminson to the northwest, Delran to the north and northeast, and Willingboro to the east. There are several unincorporated communities found within the Township: Bortons Landing, Moorestown-Lenola, North Bend, Stanwick and West Moorestown. According to the 2010 Census, the community's population was 20,726.

<sup>1</sup> <http://www.moorestown.nj.us/content/193/default.aspx>

<sup>2</sup> [http://www.njslom.org/magart0307\\_p14.html](http://www.njslom.org/magart0307_p14.html)





### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2013 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.23.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.23-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or block/lot)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2013 to present</b>					
Walton Farms (Orchard Estates) NVR (Ryan)	Residential	15+	Hartford rd 7500/1	None	Under construction (about halfway)
Laurel Mews (Toll Bros)	Residential	122	Center rd 9103/2	Could not locate.	Almost built out
Stanwick glen (Paparone)	Residential	10+	Stanwick rd 5705/10+	Wildfire: High	Under construction
Willowbrook	Residential	27	Bridgeboro and Garwood rds 7000/10	Flood: 1% Event: A-Zone; Wildfire: High	Under construction

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

### 9.23.3 Natural Hazard Event History Specific to the Municipality

Burlington County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2013 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.23-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Burlington County Designated?	Summary of Damages/Losses
April 30-May 1, 2014	Heavy Rain and Flooding	N/A	Downed trees and wires, power outages, road closures
June 23, 2015	Severe Storm (DR-4231)	Yes	Multiple road closures throughout the town and impassable during the course of the storm. There were a number of utility outages in town, including traffic lights, residential and commercial. Manpower for Police and Public Works was increased for debris removal, policing duties and road closures.
January 22-24, 2016	Severe Winter Storm (DR-4264)	Yes	The majority of the roads within the Township were closed and impassable during the course of the storm due to down trees, debris and down power lines. Homes suffered exterior damage due to trees falling onto the same, causing minor damage. Manpower for Police and Public Works was increased for debris removal, policing duties and road closures.

Notes:

EM Emergency Declaration (FEMA)





FEMA Federal Emergency Management Agency  
 DR Major Disaster Declaration (FEMA)  
 N/A Not applicable

### 9.23.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Township of Moorestown. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Township of Moorestown. During the review of the hazard/vulnerability risk ranking, the Township indicated the following:

- Flood was changed from a low hazard to a medium hazard.

**Table 9.23-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Coastal Erosion	RCV Exposed to CE Hazard Area: \$25,198,655	Rare	6	Low
Drought	Damage estimate not available.	Frequent	30	Medium
Earthquake	100-Year GBS: \$0 500-Year GBS: \$5,750,456 2,500-Year GBS: \$84,645,373	Occasional	28	Medium
Flood*	1% Annual Chance: \$250,295,272	Frequent	18	Medium
Landslide	RCV Exposed to Landslide Hazard Area \$304,520,847	Occasional	12	Low
Severe Storm	100-year MRP: \$7,018,194 500-year MRP: \$43,702,347 Annualized: \$278,625	Frequent	48	High
Severe Winter Weather	1% GBS: \$61,095,994 5% GBS: \$305,479,972	Frequent	51	High
Wildfire	Estimated Value in the Extreme, Very High, and High Hazard Areas: \$183,116,944	Occasional	12	Low

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
  - b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.  
 High = Total hazard priority risk ranking score of 31 and above  
 Medium = Total hazard priority risk ranking of 20-30+  
 Low = Total hazard risk ranking below 20
  - c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
  - d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
  - e. The HAZUS-MH earthquake model results are reported by Census Tract.
- \* The Township of Moorestown changed the risk ranking for flood from low to medium.





### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Moorestown.

**Table 9.23-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Township of Moorestown	140	58	\$312,472.02	0	0	0

Source: FEMA Region 2 2017, 2018

(1) Repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 and are current as of 10/31/2017. Policy and claims statistics current as of 9/30/2018

Please note the total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 9/30/2018.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones are based on the addresses geocoded from the FEMA Region 2 policy file – 10/31/2017.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

### Critical Facilities

The table below presents Hazards United States (HAZUS) – Multi-Hazards (MH) estimates of the damage and loss of use to critical facilities in the community as a result of a 1-percent annual chance flood event.

**Table 9.23-6. Potential Flood Losses to Critical Facilities**

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

Source: FEMA 2017, Burlington County

Note: - = Damages not calculated by HAZUS-MH v4.0

### Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- The area of Winthrop Avenue from the Pennsauken Creek is prone to flooding.
- Recurring flooding at the intersection of New Albany Road and Glen Avenue and the area of New Albany Road and the Pompeston Creek.

### 9.23.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of mitigation planning into existing and future planning mechanisms



**Planning and Regulatory Capability**

The table below summarizes the regulatory tools that are available to the Township of Moorestown.

**Table 9.23-7. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes 2002, 2009, 2018	STATE, COUNTY, LOCAL	COMMUNITY DEVELOPMENT	N.J.S.A 40:55d-28
Capital Improvements Plan	Yes, Date unknown	LOCAL	PUBLIC WORKS	
Floodplain Management / Basin Plan	N/A			
Stormwater Management Plan	Yes, Date unknown	LOCAL	PUBLIC WORKS	SECTION 158-25 OF SUBDIVISION ORDINANCE
Open Space Plan	Yes, 12/2009	LOCAL	COMMUNITY DEVELOPMENT	SECTION IV OF MASTER PLAN
Stream Corridor Management Plan	Yes, 2/2000	LOCAL	COMMUNITY DEVELOPMENT	ORDINANCE 180-94 AND 95 (SOIL EROSION & SETBACKS FROM STREAMS AND PONDS)
Watershed Management or Protection Plan	Yes, 8/2013	LOCAL	COMMUNITY DEVELOPMENT	CONSERVATION PLAN ELEMENT OF MASTER PLAN
Economic Development Plan	Yes, 11/2012	LOCAL	COMMUNITY DEVELOPMENT	SECTION XI OF MASTER PLAN
Comprehensive Emergency Management Plan	Yes, 10/2009	LOCAL	POLICE/OEM	RECERTIFIED BY NJSP IN 2013
Emergency Operation Plan	Yes, 10/2009	LOCAL	POLICE/OEM	
Post-Disaster Recovery Plan	Yes, 10/2009	LOCAL	POLICE/OEM	
Transportation Plan	Yes, Date unknown			CIRCULATION PLAN ELEMENT IN MASTER PLAN
Strategic Recovery Planning Report	No			
Other Plans: COASTAL VULNERABILITY STUDY	Yes, 8/2017	LOCAL; DVRPC	COMMUNITY DEVELOPMENT	ON TWP AND DVRPC WEBSITES
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes, 1977	LOCAL	COMMUNITY DEVELOPMENT	SECTION 180 OF TWP CODE
Subdivision Ordinance	Yes, 1954	LOCAL	COMMUNITY DEVELOPMENT	SECTION 158 OF TWP CODE
NFIP Flood Damage Prevention Ordinance	Yes; 11/2017	Federal, State, Local	COMMUNITY DEVELOPMENT	SECTION 83 OF TWP CODE
NFIP: Cumulative Substantial Damages	No			



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP: Freeboard	Yes	State, Local		SECTION 83
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes	LOCAL	COMMUNITY DEVELOPMENT	SECTION 158-37
Stormwater Management Ordinance	Yes	LOCAL	ENGINEER, MEAC, PW, CD	SECTION 158-25
Municipal Separate Storm Sewer System (MS4)	No			
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	No			
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No			

### Administrative and Technical Capability

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

**Table 9.23-8. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	COMMUNITY DEVELOPMENT
Mitigation Planning Committee	No	
Environmental Board/Commission	Yes	COMMUNITY DEVELOPMENT
Open Space Board/Committee	Yes	COMMUNITY DEVELOPMENT
Economic Development Commission/Committee	Yes	COMMUNITY DEVELOPMENT
Maintenance programs to reduce risk	No	
Mutual aid agreements	Yes	
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	IN-HOUSE PLANNER, 3 <sup>RD</sup> PARTY ENGINEER AND PLANNER
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	3 <sup>RD</sup> PARTY ENGINEER
Planners or engineers with an understanding of natural hazards	Yes	Community Development
NFIP Floodplain Administrator (FPA)	Yes	CONSTRUCTION CODE OFFICIAL; COMMUNITY DEVELOPMENT
Surveyor(s)	Yes	3 <sup>RD</sup> PARTY ENGINEER



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	PLANNER/ENGINEER
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	POLICE/FIRE
Grant writer(s)	Yes	VARIOUS
Staff with expertise or training in benefit/cost analysis	Yes	FINANCE
Professionals trained in conducting damage assessments	No	

### Fiscal Capability

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

**Table 9.23-9. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	No
Open Space Acquisition funding programs	No
Other	No

### Community Classifications

The table below summarizes classifications for community program available to the Township of Moorestown.

**Table 9.23-10. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	NP		
Building Code Effectiveness Grading Schedule (BCEGS)	NP		
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes		1970
Storm Ready Certification	Yes	N/A	5/2006
Firewise Communities classification	N/A		
Natural disaster/safety programs in/for schools	Yes		





Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Organizations with mitigation focus (advocacy group, non-government)	N/A		
Public education program/outreach (through website, social media)	Yes		
Public-private partnership initiatives addressing disaster-related issues	N/A		

Note:

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

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO’s Public Protection website at <https://www.isomitigation.com/ppc/>
- The National Weather Service Storm Ready website at <http://www.stormready.noaa.gov/index.html>
- The National Firewise Communities website at <http://firewise.org/>

### Self-Assessment of Capability

The table below provides an approximate measure of the Township of Moorestown’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.23-11. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability			X
Administrative and technical capability			X
Fiscal capability			X
Community political capability			X
Community resiliency capability			X
Capability to integrate mitigation into municipal processes and activities			X

### National Flood Insurance Program





## NFIP Floodplain Administrator (FPA)

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Anthony Zappasodi, Community Development

## Flood Vulnerability Summary

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Moorestown Township does not maintain lists or inventories of properties that have been damaged by flooding. The Township does not have specific information available pertaining to Sandy or other recent events to characterize or quantify the number of structures damaged; however, substantial damage estimates have been prepared for past events. The FPA indicated that there are no residents currently interested in mitigating their property.

## Resources

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The FPA indicated that the responsibilities of floodplain administration for Moorestown Township are shared between the Township Construction Official and the Director of Community Development and that they can use a third party Engineer as needed. NFIP administration services and functions provided to residents of Moorestown include permit review, inspections, damage assessments and meeting with residents and professionals when requested. Currently the Township offers education and outreach to residents regarding flood hazards/risk and flood risk reduction via the Township website and by answering specific questions when received. The FPA stated that there are currently no barriers to running an effective floodplain management program; however, he does feel there is always room for more training as he is new to the position. The FPA would consider attending continuing education and certification training on floodplain management if it were offered in the future.

## Compliance History

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The Township is in good standing with the NFIP, having recently adopted ordinance revisions to comply with FEMA and NJDEP. However, the date of the most recent compliance visit is unknown.

## Regulatory

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Moorestown Township's floodplain ordinance utilizes the minimum standards set by FEMA and the State of New Jersey. There are additional ordinances that support floodplain management in the Township. The Township is currently not in the CRS program and the FPA is unsure if he would attend a CRS training if offered locally.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

## Planning

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**Master Plan:** The Reexamination Report of the Master Plan for Moorestown was adopted on June 26, 2008. This Reexamination Report reviews the 2002 Master Plan. The 2002 Master Plan was a completely revised and updated document that followed 19 amendments or revisions and the 2001 Reexamination Report. The 2008 Reexamination Report makes recommendations about revisions to the conservation element, open space and recreation element, historic preservation element, circulation plan element, land use plan element, Main Street town center sub-element, and Housing and Fair Share Plan.



Since the 2008 Reexamination Report of the Master Plan the open space and recreation plan element, Housing element and fair share plan, conservation element, and circulation element have all been revised.

### **Regulatory and Enforcement (Ordinances)**

**NJDEP Municipal Stormwater Regulation Program:** New Jersey Department of Environmental Protection issued the statewide municipal stormwater permits that became effective January 1, 2018 and authorizes stormwater discharges from municipal separate storm sewer systems (MS4s) to the waters of the state. Municipalities that have been issued a Notice of Authorization (NOA) to discharge under the Tier A (urban and coastal municipalities) or Tier B (more rural municipalities) master general permit must develop and implement a stormwater program. The first New Jersey Pollutant Discharge Elimination System (NJPDES) permit authorizing discharges from MS4 municipalities became effective in 2004 (subsequently renewed in 2009 and now in 2018), so most municipalities have developed stormwater programs; however, the 2018 permit requires the municipalities to maintain a stormwater management plan and enforce stormwater ordinances to address development and redevelopment consistent with the Stormwater Management rules at N.J.A.C 7:8, as well as implementation of additional requirements. For more information on the municipal stormwater regulation program, see [www.nj.gov/dep/dwq/msrp\\_home.htm](http://www.nj.gov/dep/dwq/msrp_home.htm). Moorestown is a Tier A municipality.

**Stormwater Management:** Chapter 203 of the municipal code discusses stormwater quality. The chapter is intended to regulate pet waste, improper disposal of waste, wildlife feeding, yard waste collection program, illicit connection, refuse containers/dumpsters, and private storm drain inlet retrofitting in order to protect public health, safety and welfare, and to prescribe penalties for failure to comply. This chapter also regulates the municipal separate storm sewer system (MS4) operated by the Township of Moorestown.

**Flood Damage Prevention:** The purpose of the flood damage prevention ordinance (Chapter 83 of the municipal code) is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- Protect human life and health.
- Minimize expenditure of public money for costly flood control projects.
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
- Minimize prolonged business interruptions.
- Minimize damage to public facilities and utilities, such as water and gas mains; electric, telephone and sewer lines; streets; and bridges located in areas of special flood hazard.
- Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas.
- Ensure that potential buyers are notified that property is in an area of special flood hazard.
- Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

### **Operational and Administration**

The Township of Moorestown has the following Boards and Committees:

- Appearance Committee
- Bicycle Circulation and Safety Steering Committee
- Board of Special Assessment Commissioners
- Board of Trustees of Free Public Library
- Economic Development Advisory Committee



- Environmental Advisory Committee
- Ethical Standards Board
- Green Team – Sustainable Moorestown
- Low- and Moderate-Income Housing Oversight Committee
- Open Space Advisory Committee
- Planning Board
- Recreation Advisory Board
- Telecommunications and Technology Committee
- Tree Planting and Preservation Committee
- Zoning Board of Adjustment

**Sustainable Jersey:** The Township of Moorestown is silver certified in the Sustainable Jersey program. Sustainable Jersey certification is a prestigious designation for municipal governments in New Jersey. Municipalities that achieve the certification are considered by their peers, by state government and by the experts and civic organizations in New Jersey, to be among the leading municipalities. All actions taken by municipalities to score points toward certification must be accompanied by documentary evidence and is reviewed. The certification is free and completely voluntary. The Township has received points in the Emergency Management and Resiliency Category for its work on studying flooding risk for the purpose of climate adaptation.

### Funding

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Moorestown Township has mutual aid agreements and various staff with grant writing capability. Financial resources that the Township has access to or are eligible to use include Community Development Block Grants, Capital Improvement Project Funding, the authority to levy taxes for specific purposes, user fees for water, sewer, gas or electric service, the ability to incur debt through general obligation bonds, and the ability to incur debt through special tax bonds.

### Education and Outreach

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The Township of Moorestown has a website where one can access information about the Township government, community, services, MoorestownTV, and view recent news, upcoming events, and agendas and minutes. On the Township's Emergency Management page there is information regarding preparedness planning, emergency preparedness for people with disabilities, the storm damage reporting procedure, the Burlington County hazardous mitigation planning project, and links to additional resources like the American Red Cross, Center for Disease Control, FEMA, and Homeland Security. The Township utilizes Nixle and social media to alert residents of emergency events and other storm related information.

## 9.23.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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The following table indicates progress on the community's mitigation strategy identified in the 2013 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.



Table 9.23-12. Status of Previous Mitigation Actions

Action Number	2013 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
MT-1	<p>Conduct an evaluation of backyard residential flooding on the south side of Winthrop Ave. from the Pennsauken Creek, including studies on:</p> <ul style="list-style-type: none"> <li>Dredging existing creek bed</li> <li>Bulkheading creek bed</li> <li>Raising affected residences</li> <li>Buying out affected residences</li> </ul>	<p>Lead: Community Development Support: Twp. DPW, NJOEM, FEMA</p>	In Progress	<ol style="list-style-type: none"> <li>0% complete</li> <li>Flooding due to a small storm drain</li> <li>No funding secured</li> </ol>	<ol style="list-style-type: none"> <li>Include in 2019 HMP</li> <li>Not in the budget for this year; seek funding for project</li> </ol>
MT-2	<p>Conduct an evaluation of recurring flooding at the intersection of New Albany Rd. and Glen Ave.</p> <ul style="list-style-type: none"> <li>Survey existing storm drainage</li> <li>Engineering study on replacement of existing mains with larger capacity</li> </ul>	<p>Lead: Township Engineer, DPW</p>	In Progress	Lack of funding	<ol style="list-style-type: none"> <li>Discontinue</li> <li>No longer a priority due to lack of funding</li> </ol>
MT-3	<p>Conduct an evaluation of recurring flooding at New Albany Rd. at the Pompeston Creek</p> <ul style="list-style-type: none"> <li>Survey Creek flow for obstruction</li> <li>Engineering plan for clearing of Creek obstructions</li> </ul>	<p>Lead: DPW, Township Engineer, NJ DEP</p>	In Progress	Lack of funding	<ol style="list-style-type: none"> <li>Discontinue</li> <li>No longer a priority due to lack of funding</li> </ol>



Action Number	2013 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	<ul style="list-style-type: none"> <li>Engineering study for raising profile of roadway</li> </ul>				
MT-4	Develop a comprehensive resident notification system: NWS Storm Ready Community Program <ul style="list-style-type: none"> <li>Emergency Alert Radios</li> <li>Email Alerts</li> <li>Social Media Alerting</li> </ul>	Lead: OEM, NWS, County OEM	Complete	Nixle alerts, Social Media notification (Facebook and Twitter).	1. Discontinue 2. Ongoing capability
MT-5	Evaluate benefits of participating in CRS program	Twp. Committee, Planning, OEM, Floodplain Adm.	Complete	New maps drawn, All residents advised	1. Discontinue 2. Complete
MT-6	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: <ul style="list-style-type: none"> <li>Disaster preparedness</li> <li>Hazard mitigation</li> </ul>	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Complete	Social media alerts from PES&G	1. Discontinue 2. Complete
MT-7	Improve municipal communications systems to include information sharing with county and surrounding municipalities.	OEM with support from County, NJOEM and FEMA	Complete	Agency websites, social media	1. Discontinue 2. Complete
MT-8	Obtain and install backup power sources at all critical facilities to include shelters.	Municipality engineering, OEM with support from County, NJOEM and FEMA	Complete	All health care facilities have backup generators. All shelters i.e. schools and firehouses are also equipped with backup generators.	1. Discontinue 2. Complete



Action Number	2013 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
MT-9	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	Municipal Government, OEM with support from County, NJOEM, FEMA and surrounding communities	Complete	1. Still working with neighboring communities on establishing mutual aid agreements.	1. Discontinue 2. Ongoing capability; Continue working with municipalities to expand and enhance agreements
MT-10	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	Municipal Government, OEM with support from Planning Partners, County Planning, NJOEM, FEMA	Complete	1. Will continue to monitor and update this plan every 5 years.	1. Discontinue 2. Ongoing capability
MT-11	Continue to promote the participation of Floodplain Administrator within the planning process and other related activities.	Municipal Government with support from County, NJOEM and FEMA	Complete	1. Both the Floodplain Administrator and Deputy Floodplain Administrator are involved with providing updates.	1. Discontinue 2. Ongoing capability
MT-12	Provide public education and outreach on proper installation and/or use of backup power	Municipal Clerk, OEM and government	Complete	1. Updates via PSE&G are provided on social media to provide proper installation and use of backup power.	1. Discontinue 2. Education and outreach provided by PSE&G
MT-13	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies.	Municipal DPW	Complete	1. Third party tree companies trimming trees for PSE&G around power lines to avoid intrusion.	1. Discontinue 2. Ongoing capability



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Township of Moorestown has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2013 Plan:

- None identified by the municipality.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The municipality participated in a mitigation action workshop in March 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.23-13 summarizes the comprehensive-range of specific mitigation initiatives the Township of Moorestown would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.23-14 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



**Table 9.23-13. Proposed Hazard Mitigation Initiatives**

Initiative	Mitigation Initiative	Critical Facility (Yes / No)	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
MT-1 (Former MT-1)	<p>Conduct an evaluation of backyard residential flooding on the south side of Winthrop Ave. from the Pennsauken Creek, including studies on:</p> <ul style="list-style-type: none"> <li>Dredging existing creek bed</li> <li>Bulkheading creek bed</li> <li>Raising affected residences</li> </ul> <p>Buying out affected residences</p>	No	Flood	1, 2	<p>Lead: Community Development Support: Twp. DPW, NJOEM, FEMA</p>	High	High	Grant funding with local cost share	Short	High	NSP, SIP	PP
MT-2	<p>During future updates of the Master Plan, Transportation Plan, Capital Improvements Plan, the Emergency Operation Plan, or other plans, work to integrate hazard mitigation principles and recommendations into the plans. Additionally, use these hazard mitigation principles and plan recommendations to update local building and zoning codes to create a more resilient community.</p>	No	All Hazards	All	Municipality	High	Low	Municipal Budget	Short Term, Depending on update schedule	High	LPR	PR, PI

**Notes:**

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

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

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

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program  
 HMGP Hazard Mitigation Grant Program  
 PDM Pre-Disaster Mitigation Grant Program  
 RFC Repetitive Flood Claims Grant Program (discontinued in 2015)

Timeline:

Short 1 to 5 years  
 Long Term 5 years or greater  
 OG On-going program  
 DOF Depending on funding





N/A	Not applicable	SRL	Severe Repetitive Loss Grant Program (discontinued in 2015)
NFIP	National Flood Insurance Program		
OEM	Office of Emergency Management		

Costs:

Where actual project costs have been reasonably estimated:

Low < \$10,000  
 Medium \$10,000 to \$100,000  
 High > \$100,000

Where actual project costs cannot reasonably be established at this time:

Low Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.  
 Medium Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.  
 High Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low= < \$10,000  
 Medium \$10,000 to \$100,000  
 High > \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low Long-term benefits of the project are difficult to quantify in the short term.  
 Medium Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.  
 High Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

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

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities





Table 9.23-14. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
MT-1 (Former MT-1)	<p>Conduct an evaluation of backyard residential flooding on the south side of Winthrop Ave. from the Pennsauken Creek, including studies on:</p> <ul style="list-style-type: none"> <li>Dredging existing creek bed</li> <li>Bulkheading creek bed</li> <li>Raising affected residences</li> </ul> <p>Buying out affected residences</p>	1	1	1	0	1	1	-1	0	0	1	0	1	1	0	7	High
MT-2	<p>During future updates of the Master Plan, Transportation Plan, Capital Improvements Plan, the Emergency Operation Plan, or other plans, work to integrate hazard mitigation principles and recommendations into the plans. Additionally, use these hazard mitigation principles and plan recommendations to update local building and zoning codes to create a more resilient community.</p>	1	1	1	1	1	1	1	0	0	1	1	0	1	0	10	High

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions.





### **9.23.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.23.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Township of Moorestown 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 considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Moorestown has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### **9.23.9 Additional Comments**

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None at this time.



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

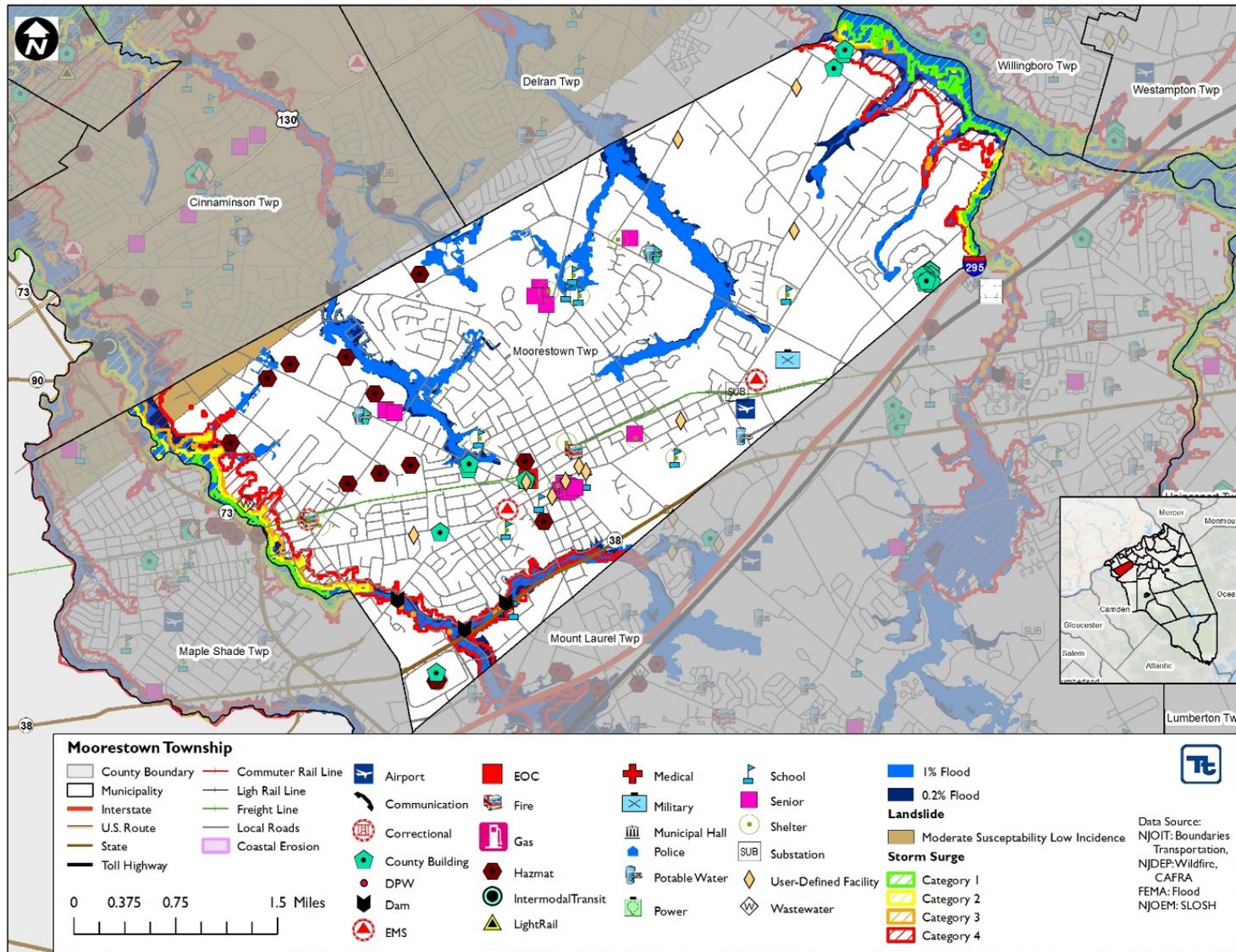




Figure 9.23-2. Township of Moorestown Hazard Area Extent and Location Map 2

