



9.11 Township of East Hanover

This section presents the jurisdictional annex for the Township of East Hanover.

9.11.1 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 |
|--|---|
| Name: Carlo DiLizia Address: 411 Ridgedale Avenue, East Hanover, NJ 07936 Phone: 973-428-3036 E-mail: health.dept@easthanovertownship.com | Maser Consulting P.A. Ralph J. Tango, Jr. rtango@maserconsulting.com , 973-398-3110 |

9.11.2 Municipal Profile

The Township of East Hanover is located in southeast Morris County and covers a total area of 8.1 square miles. The boundaries of the Township are defined by the joining of two rivers, the Whippany River to the west and north and the Passaic River to the east and north. According to the U.S. Census, the 2010 population for the Township of East Hanover was 11,157.

Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 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.

Table 9.11-1. 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 |
|--|--------------------------|--------------------------|--|-------------------------------|--|
| Recent Development from 2010 to present | | | | | |
| Novartis Pharmaceuticals East Village Expansion | Commercial/Professional | 4 Structures | Block 99, Lots 9.02, 12, 14, 15 & 16 Block 128, Lots 1 & 12 | Flood: 1% Chance; NEHRP: D | Construction of 4 buildings on Novartis campus |
| JTSL Development | Multifamily Residential | 2 Structures 18 Units | Block 1.01, Lot 32.02 | Flood: 1% Chance; NEHRP: D | Multifamily Residential Development |
| Known or Anticipated Development in the Next Five Years | | | | | |
| Block 99, Lot 4 | Unknown | Unknown | Block 99, Lot 4 | NEHRP: D | Unknown |

* Only location-specific hazard zones or vulnerabilities identified.

9.11.3 Natural Hazard Event History Specific to the Municipality

Morris 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 2008 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 9.11-2. Hazard Event History

| Dates of Event | Event Type | FEMA Declaration # (If Applicable) | County Designated? | Summary of Damages/Losses |
|-------------------------------|-----------------------------------|------------------------------------|--------------------|--|
| March 12 – April 15, 2010 | Severe Storms and Flooding | DR-1897 | Yes | From March 12 through April 15, 2010, severe storms with high wind. Police, Fire, DPW, OEM, CERT to assist in public safety and facilitate restoring community. Approximately \$40,267.66 Eligible Forced Account Labor, Equipment, Contracts, DAC. \$30,200.75 reimbursed through FEMA-Remaining Balance is local share. |
| December 26-27, 2010 | Severe Winter Storm and Snowstorm | DR-1954 | Yes | From December 26-27, 2010 severe winter snow storm. Police, Fire, DPW, OEM, CERT to assist in snow removal and restoring community. \$59,479.87 in eligible labor, equipment, material, contractor and DAC costs submitted to FEMA of which \$44,609.15 was reimbursed. Remaining balance is local share |
| August 26 – September 5, 2011 | Hurricane Irene | EM-3332 DR-4021 | Yes Yes | From August 27-September 5, 2011 Widespread damage, high winds, heavy rain and flooding. Melanie Lane Bridge compromised. Total eligible costs for Police, Fire, DPW, OEM, CERT \$131,004.81 in eligible labor, equipment, material, contractor, DAC costs submitted to FEMA which \$ 98,253.61 was reimbursed. Remaining balance is local share |
| October 29, 2011 | Severe Storm | DR-4048 | Yes | On October 29, 2011 Severe storm with localized damage. Public properties and public right of way debris removal which included vegetative debris accumulations on private property and removed by East Hanover (Approx 7,500 CY). Labor and contract costs eligible \$41,742.18 submitted to FEMA which \$ 31,306.64 was reimbursed. Remaining balance is local share |
| October 26 – November 8, 2012 | Hurricane Sandy | EM-3354 DR-4086 | Yes Yes | Yes-Between Oct 26-Nov 8, 2012 high winds resulted in down trees, power lines and power outages for 15 days. Emergency protective measures from Police, Fire, DPW, OEM, CERT. Shelter and Warming stations set up at 2 locations for 15 days. \$559,647.24 eligible costs submitted to FEMA which \$502,664.32 reimbursed. Remaining is local share. |

9.11.4 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 East Hanover. 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 East Hanover.





Table 9.11-3. Hazard Risk/Vulnerability Risk Ranking

| Hazard type | Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c} | Probability of Occurrence | Risk Ranking Score (Probability x Impact) | Hazard Ranking ^b |
|---------------------|--|---------------------------|---|-----------------------------|
| Drought | Damage estimate not available | Frequent | 27 | Medium |
| Dam Failure | Damage estimate not available | Rare | 6 | Low |
| Earthquake | 500-year MRP: \$7,557,324 2,500-year MRP: \$127,506,295 | Occasional | 32 | High |
| Extreme Temperature | Damage estimate not available | Frequent | 27 | Medium |
| Flood | 1% Annual Chance: \$5,664,478 | Frequent | 27 | Medium |
| Geological Hazards | Exposed to Class A and Class B: \$0 | Rare | 6 | Low |
| Severe Storm | 100-Year MRP: \$4,503,365 500-year MRP: \$17,867,113 Annualized: \$299,946 | Frequent | 48 | High |
| Winter Storm | 1% GBS: \$54,018,962 5% GBS: \$270,094,812 | Frequent | 54 | High |
| Wildfire | Estimated Value Exposed to Extreme, Very High and High: \$7,373,530 | Rare | 6 | Low |
| Disease Outbreak | Damage estimate not available | Frequent | 36 | High |
| Hazardous Materials | Damage estimate not available | Frequent | 36 | High |
| Infestation | Damage estimate not available | Frequent | 18 | Medium |

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.



National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of East Hanover.

Table 9.11-4. 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 East Hanover | 184 | 80 | \$1,637,773.87 | 7 | 1 | 103 |

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.

(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 is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

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.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

Critical Facilities

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

Table 9.11-5. 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 | Days to 100-Percent(2) |
| East Hanover Township | DPW | X | X | 0 | 0 | - |
| Givaudan Roure Flavors | Hazardous Material | | X | - | - | - |

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

Other Vulnerabilities Identified

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



9.11.5 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 East Hanover.

Table 9.11-6. Planning and Regulatory Tools

| Tool/Program (code, ordinance, plan) | Do you have this? (Yes/No) | Authority (local, county, state, federal) | Dept./Agency Responsible | Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.) |
|---|----------------------------------|---|---|--|
| Planning Capability | | | | |
| Master/Comprehensive Plan | 1/07/2005 | Local | Land Use Planning Board (LUPB) | 2005 MASTER PLAN |
| Capital Improvements Plan | Yes | Local | Administration | 2014 |
| Floodplain Management/Basin Plan | 7/10/2012 | Local | Floodplain Administrator; OEM working with all depts. | Ch 87, Flood Damage Protection Plan Flood Acquisition Plan (with Morris County) |
| Stormwater Management Plan | 5/06/2012 | Local | Engineering | Ch 130, Stormwater Management Plan |
| Open Space Plan | 6/20/2010 | Local | LUPB | Open Space & Recreation Plan |
| Stream Corridor Management Plan | 7/10/2012 | Local | LUPB | Ch 161, Wetland Protection Plan |
| Watershed Management or Protection Plan | 7/10/2012 2004 | Local | LUPB | Ch 161, Wetland Protection Plan ERI-Focusing on Protection of Water Resources of East Hanover |
| Economic Development Plan | 2005 | Local | LUPB | Economic Element w/in 2005 Master Plan |
| Comprehensive Emergency Management Plan | 2014 | Local | Emergency Management | Emergency Operation Plan |
| Emergency Response Plan | 2014 | Local | Emergency Management | Emergency Operation Plan |
| Post-Disaster Recovery Plan | No | | | |
| Transportation Plan | 2005 | Local | LUPB | Circulation Element w/in 2005 Master Plan |
| Strategic Recovery Planning Report | No | | | |
| Other Plans: | 2013 | Local | LUPB | Environmental Resource Directory |
| Regulatory Capability | | | | |
| Building Code | Yes | State & Local | Construction Code Official | State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) |
| Zoning Ordinance | 8/11/2014 | Local | Zoning Official | Ch 95, Land Use and Zoning |
| Subdivision Ordinance | 8/11/2014 | Local | Zoning Official | Ch 95, Land Use and Zoning |



Table 9.11-6. Planning and Regulatory Tools

| Tool/Program (code, ordinance, plan) | Do you have this? (Yes/No) | Authority (local, county, state, federal) | Dept./Agency Responsible | Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.) |
|---|-------------------------------|--|------------------------------|--|
| NFIP Flood Damage Prevention Ordinance | Yes | Federal, State, Local | Construction Code Official | Ch 87, Flood Damage Protection Plan |
| NFIP: Cumulative Substantial Damages | No | | | |
| NFIP: Freeboard | Yes | State, Local | Construction Code Official | Ch 87, Flood Damage Protection Plan |
| Growth Management Ordinances | No | | | |
| Site Plan Review Requirements | 8/11/2014 | Local | Zoning Official | Ch 95, Land Use and Zoning |
| Stormwater Management Ordinance | 5/16/2012 | | | |
| Municipal Separate Storm Sewer System (MS4) | No | State | Engineering, DPW | |
| Natural Hazard Ordinance | No | | | |
| Post-Disaster Recovery Ordinance | No | | | |
| Real Estate Disclosure Requirement | Yes | State | Division of Consumer Affairs | N.J.A.C. 13:45A-29.1 |
| Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)] | N/A | | | |

Administrative and Technical Capability

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

Table 9.11-7. Administrative and Technical Capabilities

| Resources | Is this in place? (Yes or No) | Department/Agency/Position |
|---|----------------------------------|---|
| Administrative Capability | | |
| Planning Board | Yes | Land Use Planning Board |
| Mitigation Planning Committee | Yes | Municipal Officials |
| Environmental Board/Commission | Yes | Environmental Commission |
| Open Space Board/Committee | Yes | |
| Economic Development Commission/Committee | Yes | SID-Special Improvement District/EH Community Partnership |
| Maintenance Programs to Reduce Risk | Yes | Dept. of Public Works |
| Mutual Aid Agreements | Yes | Fire/Police/Health |
| Technical/Staffing Capability | | |
| Planner(s) or Engineer(s) with knowledge of land development and land management practices | Yes | Consultant – Maser Consulting |
| Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure | Yes | Consultant – Maser Consulting |
| Planners or engineers with an understanding of natural hazards | Yes | Consultant – Maser Consulting |





Table 9.11-7. Administrative and Technical Capabilities

| Resources | Is this in place? (Yes or No) | Department/Agency/Position |
|--|-------------------------------|-------------------------------|
| NFIP Floodplain Administrator | Yes | Consultant – Maser Consulting |
| Surveyor(s) | Yes | Consultant – Maser Consulting |
| Personnel skilled or trained in GIS and/or Hazus-MH applications | Yes | Consultant – Maser Consulting |
| Scientist familiar with natural hazards | No | |
| Emergency Manager | Yes | John G. Centenni |
| Grant Writer(s) | Yes | Consultant – Maser Consulting |
| Staff with expertise or training in benefit/cost analysis | Yes | Consultant – Maser Consulting |
| Professionals trained in conducting damage assessments | Yes | Consultant – Maser Consulting |

Fiscal Capability

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

Table 9.11-8. Fiscal Capabilities

| Financial Resources | Accessible or Eligible to Use (Yes/No/Don't Know) |
|---|---|
| Community Development Block Grants (CDBG, CDBG-DR) | Yes |
| Capital Improvements Project Funding | Yes |
| Authority to Levy Taxes for specific purposes | Yes-Open Space |
| User fees for water, sewer, gas, or electric service | Yes-water, sewer |
| Impact Fees for homebuyers or developers of new development/homes | No |
| Stormwater Utility Fee | Yes |
| Incur debt through general obligation bonds | Yes |
| Incur debt through special tax bonds | No |
| Incur debt through private activity bonds | No |
| Withhold public expenditures in hazard-prone areas | No |
| Other Federal or State Funding Programs | Hazard Mitigation Grant Program |
| Open Space Acquisition Funding Programs | Yes – Morris County Flood Mitigation Program (acquisitions) |
| Other | N/A |



Community Classifications

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

Table 9.11-9. Community Classifications

| Program | Do you have this? (Yes/No) | Classification (if applicable) | Date Classified (if applicable) |
|--|----------------------------|--------------------------------|---------------------------------|
| Community Rating System (CRS) | No | | |
| Building Code Effectiveness Grading Schedule (BCEGS) | TBD | | |
| Public Protection (ISO Fire Protection Classes 1 to 10) | TBD | | |
| Storm Ready | No | | |
| Firewise | No | | |
| Disaster/Safety Programs in/for Schools | Yes | | |
| Organizations with Mitigation Focus (advocacy group, non-government) | No | | |
| Public Education Program/Outreach (through website, social media) | Yes | | |
| Public-Private Partnerships | Yes | | |

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

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 five 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 <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>



Self-Assessment of Capability

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

Table 9.11-10. 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

Ralph Tango, Jr.

Flood Vulnerability Summary

The Township maintains an inventory of properties that have been damaged by floods; however, the inventory does not identify property owners interested in mitigation. The DOT determines those interested in mitigation. Funding sources for those being mitigation have been identified.

Resources

The Township engineering and building department staff provide assistance, if needed, to the NFIP FPA. Services and functions provided by the FPA include permit reviews by the building and engineering departments, site inspections, and damage assessments (as necessary). The Department of Public Works maintains GIS data of utilities under municipal jurisdiction. The FPA feels adequately supported and trained to fulfill their responsibilities; however, indicated that barriers to running an effective floodplain management program in the Township includes funding availability. The FPA would consider attending continuing education and/or certification training on floodplain management if offered.

Public outreach and education regarding flood hazards/risk, and flood risk reduction is provided through the municipal website and brochures that are available at the Building Department.

Compliance History

The Township is in good-standing with the NFIP. It is unknown when the most recent compliance audit was conducted.

Regulatory

The Township’s floodplain regulations/ordinances mirror FEMA and State regulations. Additional ordinances that support floodplain management in the Township includes the Municipal Land Use Board considers floodplain, stormwater management, and wetland issues during the course of land development application reviews. The Township of East Hanover does not participate in the Community Rating System (CRS) program. If offered, municipal staff would consider attending a CRS seminar if offered locally.



Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

The overall goals and objectives for the East Hanover Open Space and Recreation Plan Update (2010) include acquiring and preserving land for expansion of existing parks and open spaces and preserving the floodway and floodplain of the Passaic, Rockaway and Whippany Rivers to aid in controlling floodwaters to protect residents and critical environmental areas. The Plan incorporates multiple goals and objectives of the Township's Master Plan (2005) that also place an emphasis on preserving and protecting floodplains and acquiring and preserving vacant properties in the floodplain.

The purpose of the East Hanover Environmental Resource Inventory Update (2013) is to maintain a heightened awareness of the municipality's natural resources and ensure the protection of such resources. This focus on the preservation of the municipality's natural resources closely parallels the mitigation initiative of natural resource protection. This document specifically addresses climate change impacts which will have a drastic effect on mitigation planning in the future. Specifically, the ERI notes the issues of impending more frequent and severe weather and flooding events.

The Township of East Hanover participates in the County's Flood Mitigation Program (FMP) and has an approved Flood Acquisition Plan (FLAP). The Morris County FMP is the first dedicated, county-level flood acquisition program in the State of New Jersey. The FMP allows Morris County to assist municipalities in moving people out of harm's way, lowering municipal costs due to intense flooding episodes, and create natural flood capture and storage areas which protect the remaining homes and businesses. The FMP is funded by the Morris County Open Space tax and provides grant monies for municipalities to purchase flood-prone residential properties. In addition to MATCH funding available for projects with state or federal monies, Morris County has CORE funding in which the County takes the lead grant role, providing up to 75% of the cost of acquisition. To access this CORE funding, a municipality must have a FLAP. The FLAP is a dynamic, essential tool for understanding the unique flood hazards to residential homes within each community. Working closely with the municipality, Morris County creates this detailed, comprehensive analysis of the historic and current flood risks free of charge. A wide array of data is utilized from sources such as: FEMA, National Flood Insurance Program, USACE Flood Studies, USGS stream gage data, topography and soil analysis. All land acquired with MATCH and CORE funding within the FMP is permanently deed-restricted, preserved open space, available for public use as an active or passive recreation area. The acquired land is municipal-owned and managed in perpetuity.

Regulatory and Enforcement

The integration of mitigation activities in municipal land use zoning regulations serves as a logical and vital mechanism for ensuring mitigation initiatives are heeded during development. East Hanover's Municipal Code, Chapter 95 – Land Use and Planning provides a variety of mitigation actions written directly into the code. Article IX of Chapter 95 deals specifically with flood management. This article adheres to multiple mitigation planning goals such as natural resource protection, life and health protection, prevention of damage to municipal critical facilities, and the prevention of development that impacts flood height. Article IX proceeds to provide a myriad of specific regulation regarding construction which serve to minimize or completely erase the potential for flood impact. Such regulations include, but are not limited to:



- Requirements that potentially vulnerable structures be protected against flooding at time of initial construction
- Prevention/regulation of flood barriers which may negatively impact flood waters
- Regulations that control development which may adversely affect future flood height

Operational and Administration

The Township has established an Environmental Commission and Mitigation Planning Committee that aid in planning decisions to support the conservation and preservation of the Township’s critical environmental features. East Hanover has fire, health and police mutual aid agreements that allow surrounding communities to provide and receive additional support during an emergency event.

Fiscal

The Township has a multitude of fiscal capabilities for funding mitigation actions and projects. The Township has access to Community Development Block Grants and other state and federal funding sources. Local fiscal resources include capital improvements funding and an Open Space Trust Fund of a \$0.01 tax per \$100 of assessed value.

Education and Outreach

East Hanover Township is currently using the Swift911 alert system to notify residents with up-to-date community and emergency information. The Office of Emergency Management provides residents with safety tips and emergency information on the Township’s website; the OEM also holds “Are You Ready Classes” to help residents better prepare of emergency situations.

9.11.6 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2010 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 9.11-11. Past Mitigation Initiative Status

| 2010 Mitigation Action | Lead | Status | Description of Status | Next Step | Description of Next Step |
|--|----------------------|-------------|---|---------------------|---|
| East Hanover Twp 1: Backup power (generator) for School Facilities (shelter) (2). | Engineering, DPW | In Progress | Budget constraints, searching for grant opportunities | Include in 2015 HMP | Looking for grant opportunities |
| East Hanover Twp 2: Backup power (generator) for Police Headquarters. | Engineering, DPW | Complete | | Discontinue | |
| East Hanover Twp 3: Backup power (generator) for Fire Department. | Engineering, DPW | Complete | | Discontinue | |
| East Hanover Twp 4: Upgrade of Pump station in floodplain, Tremont Dr and South Ridgedale Avenue (2). | Engineering, DPW | Complete | | Discontinue | |
| East Hanover Twp 5: Melinie Lane Bridge Evaluation/Survey. | Engineering, DPW | Complete | | Discontinue | |
| East Hanover Twp 6: Storm water runoff system upgrade River Road. | Engineering, DPW | In Progress | Budget Constraints, Waiting for County to repair/replace Eagle Rock/River Rd Bridge | Include in 2015 HMP | Continue to coordinate with County |
| East Hanover Twp 7: Elevation/acquisition four Repetitive Loss properties on Dixon Lane. | OEM | No Progress | Budget and personnel constraints have prevented any progress on this initiative. | Include in 2015 HMP | Early planning stages with Township Administration and homeowners |
| East Hanover Twp 8: Elevation/acquisition of two Repetitive Loss properties on Brentwood Drive. | OEM Coordinator | No Progress | Budget and personnel constraints have prevented any progress on this initiative | Include in 2015 HMP | Early planning stages with Township Administration and homeowners |
| East Hanover Twp 9: Elevation/acquisition of one Repetitive Loss property on Mount Pleasant Avenue. | OEM Coordinator | No Progress | Budget and personnel constraints have prevented any progress on this initiative | Include in 2015 HMP | Early planning stages with Township Administration and homeowners |
| East Hanover 10: Develop all-hazards public education and outreach program for hazard mitigation and preparedness | Local and County OEM | In Progress | 50% Complete-New Sign Board and Swift Reach communication system. Looking to upgrade Sirens | Include in 2015 HMP | |



Proposed Hazard Mitigation Initiatives for the Plan Update

The Township of East Hanover participated in a mitigation action workshop in January 2015 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 9.11-12 summarizes the comprehensive-range of specific mitigation initiatives the Township of East Hanover would like to pursue in the future to reduce the effects of hazards. Some of these initiatives 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, fourteen 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 9.11-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.11-12. Proposed Hazard Mitigation Initiatives

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | CRS Category |
|-------------------------------------|---|--|---------------------|-----------|--|--------------------|----------------|-----------------------------|----------------|----------|---------------------|--------------|
| TEH-1 (former East Hanover 1) | Backup power (generator) for School Facilities (shelter) (2). | Existing | All | G-3, G-4 | Engineering, DPW | High | High | HMGP, HMA Grants | Short Term DOF | High | SIP | SP |
| TEH-2 (former East Hanover 6) | Storm water runoff system upgrade River Road. | Existing | Flood | G-4 | Engineering, DPW | High | High | HMA Grants | Long Term DOF | High | SIP | SP |
| TEH-3 (former East Hanover 7, 8, 9) | Support elevation/acquisition of Repetitive Loss properties on Dixon Lane, Brentwood, Mt. Pleasant and other identified areas | Existing | Flood | G-3, G-4 | OEM | High | High | HMA Grants, Property Owners | Long Term DOF | Medium | SIP | SP |
| TEH-4 (former East Hanover 10) | Develop all-hazards public education and outreach program for hazard mitigation and preparedness | N/A | All | G-1 | Local and County OEM | Medium | Low | County, Municipal Budget | Short Term DOF | High | EAP | PE |
| TEH-5 | Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations | N/A | All Hazards | G-1, G-3 | Municipality with support from County, NJOEM, FEMA and surrounding communities | Medium | Low | Municipal Budget | Short Term | High | LPR | PR |

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
- N/A Not applicable
- NFIP National Flood Insurance Program
- NJDEP New Jersey Department of Environmental Protection

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 2015)
- SRL Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

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





Acronyms and Abbreviations:

NJOEM New Jersey Office of Emergency Management
OEM Office of Emergency Management

Potential FEMA HMA Funding Sources:

Timeline:

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 9.11-13. 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 Owner | Community Objectives | Total | High/Medium/Low |
|-----------------------------------|---|-------------|---------------------|--------------------|-----------|-----------|-------|--------|---------------|--------|----------------|--------------|----------|-----------------------|----------------------|-------|-----------------|
| TEH-1 (former East Hanover 1) | Backup power (generator) for School Facilities (shelter) (2). | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | High |
| TEH-2 (former East Hanover 6) | Storm water runoff system upgrade River Road. | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 | High |
| TEH-3 (former East Hanover 7) | Support elevation/acquisition of repetitive loss properties. | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 8 | Medium |
| TEH-4 (former East Hanover 10) | Develop all-hazards public education and outreach program for hazard mitigation and preparedness | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | High |
| TEH-5 | Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 13 | High |

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.



9.11.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.11.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Township of East Hanover that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are 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 East Hanover has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.11.9 Additional Comments

None at this time.



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

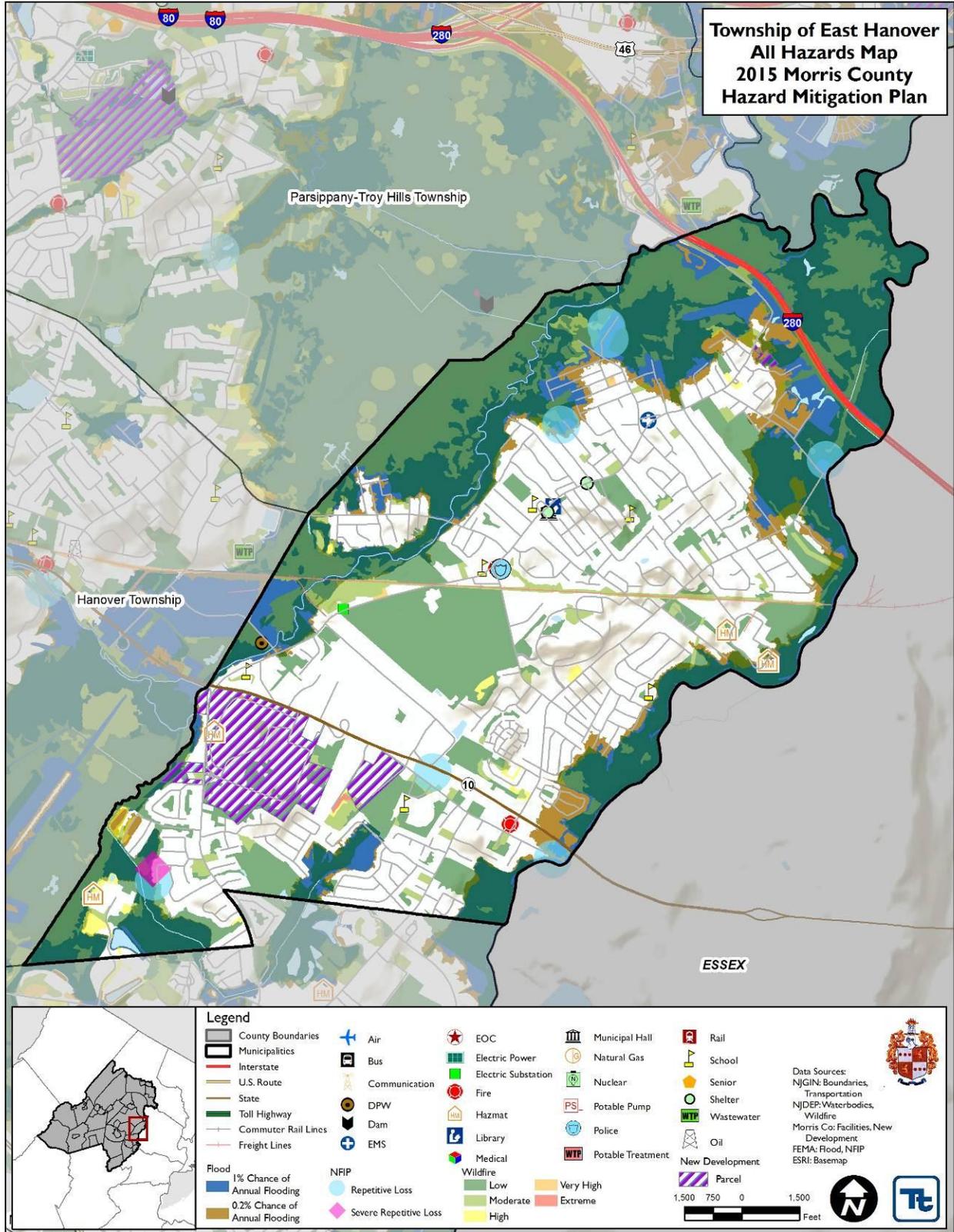
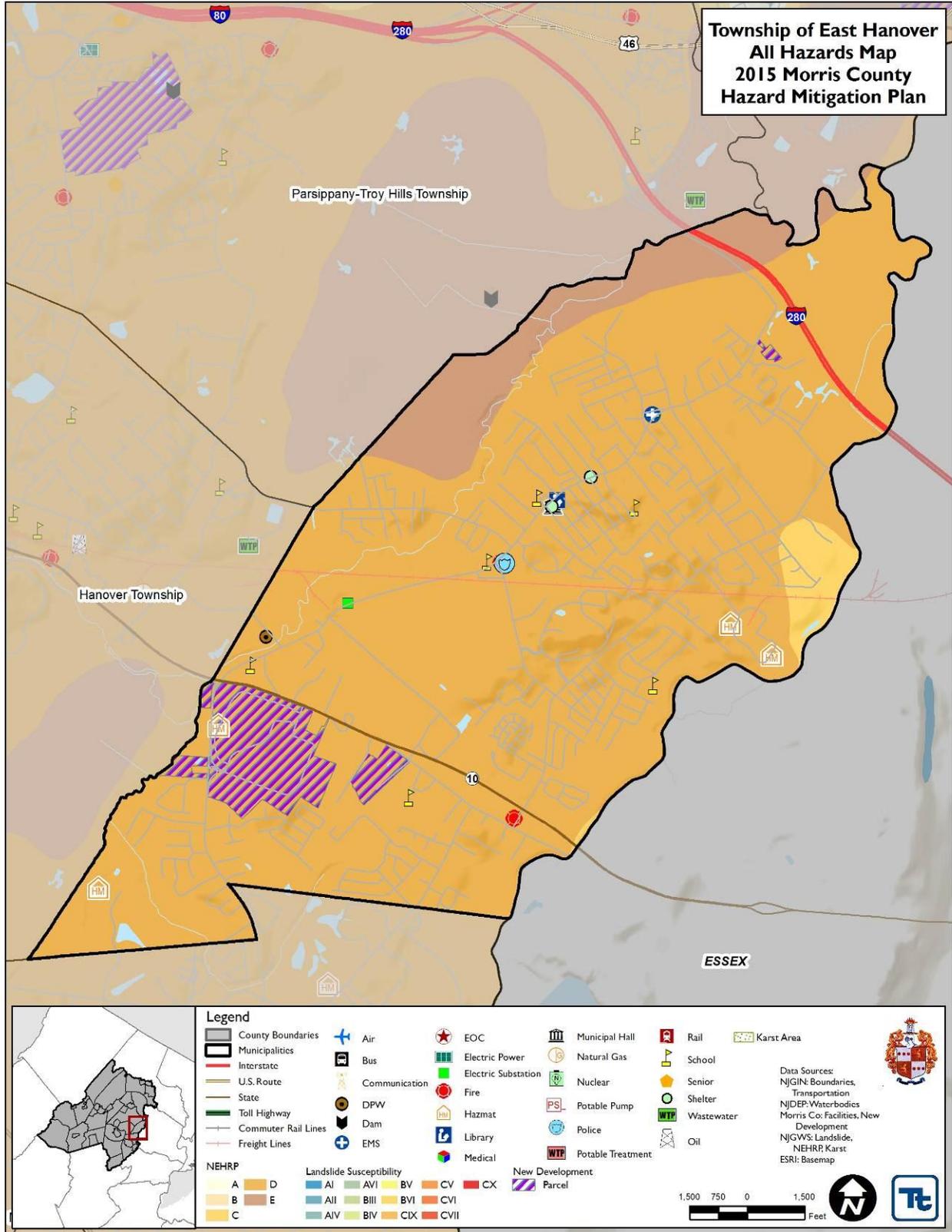




Figure 9.11-2. Township of East Hanover Hazard Area Extent and Location Map 2





Action Number: TEH-1
Mitigation Action/Initiative: Backup power (generator) for School Facilities

| Assessing the Risk | |
|--|---|
| Hazard(s) addressed: | All |
| Specific problem being mitigated: | Loss of power for critical facility |
| Evaluation of Potential Actions/Projects | |
| Actions/Projects Considered (name of project and reason for not selecting): | 1. Install generator |
| | 2. Do nothing |
| | 3. |
| Action/Project Intended for Implementation | |
| Description of Selected Action/Project | Backup power (generator) for School Facilities (shelter) (2). |
| Action/Project Category | SIP |
| Goals/Objectives Met | 3, 4 |
| Applies to existing and/or new development; or not applicable | Existing |
| Benefits (losses avoided) | High |
| Estimated Cost | High |
| Priority* | High |
| Plan for Implementation | |
| Responsible/Lead Agency/Department | Engineering/DPW |
| Local Planning Mechanism | Emergency Operations Plan |
| Potential Funding Sources | HMGP, HMA Grants |
| Timeline for Completion | Short Term/DOF |
| Reporting on Progress <i>(Do not complete - this will be used for the 2020 Update)</i> | |
| Date of Status Report/ Report of Progress | Date: Progress on Action/Project: |

* Refer to results of Prioritization (page 2)



Action Number: TEH-1

Mitigation Action/Initiative: Backup power (generator) for School Facilities

| Criteria | Numeric Rank (-1, 0, 1) | Provide brief rationale for numeric rank when appropriate |
|--------------------------------|-------------------------|--|
| Life Safety | 1 | Provide a shelter for residents |
| Property Protection | 1 | Allow for operations to continue during times of power outages |
| Cost-Effectiveness | 1 | |
| Technical | 1 | |
| Political | 1 | |
| Legal | 1 | |
| Fiscal | 0 | |
| Environmental | 0 | |
| Social | 1 | |
| Administrative | 1 | |
| Multi-Hazard | 1 | |
| Timeline | 1 | |
| Local Champion | 1 | |
| Other Community Objectives | 1 | |
| Total | 12 | |
| Priority (High/Med/Low) | High | |



Action Number: TEH-2

Mitigation Action/Initiative: Storm water runoff system upgrade River Road.

| Assessing the Risk | |
|--|---|
| Hazard(s) addressed: | Flood |
| Specific problem being mitigated: | Roadway flooding and impeding evacuation to/from Essex County |
| Evaluation of Potential Actions/Projects | |
| Actions/Projects Considered (name of project and reason for not selecting): | 1. Upgrade storm water runoff system |
| | 2. Dredge River |
| | 3. Do nothing |
| Action/Project Intended for Implementation | |
| Description of Selected Action/Project | Storm water runoff system upgrade on River Road. |
| Action/Project Category | SIP |
| Goals/Objectives Met | 4 |
| Applies to existing and/or new development; or not applicable | Existing |
| Benefits (losses avoided) | High |
| Estimated Cost | High |
| Priority* | High |
| Plan for Implementation | |
| Responsible/Lead Agency/Department | Engineering/DPW |
| Local Planning Mechanism | |
| Potential Funding Sources | HMA Grants |
| Timeline for Completion | Long Term/DOF |
| Reporting on Progress <i>(Do not complete - this will be used for the 2020 Update)</i> | |
| Date of Status Report/ Report of Progress | Date: Progress on Action/Project: |

* Refer to results of Prioritization (page 2)



Action Number: TEH-2

Mitigation Action/Initiative: Storm water runoff system upgrade River Road.

| Criteria | Numeric Rank (-1, 0, 1) | Provide brief rationale for numeric rank when appropriate |
|--------------------------------|-------------------------|---|
| Life Safety | 1 | Reduce flooding on River Road to allow access to residents in this area |
| Property Protection | 1 | |
| Cost-Effectiveness | 1 | |
| Technical | 1 | |
| Political | 1 | |
| Legal | 1 | |
| Fiscal | 0 | |
| Environmental | 1 | |
| Social | 1 | |
| Administrative | 1 | |
| Multi-Hazard | 1 | |
| Timeline | 1 | |
| Local Champion | 1 | |
| Other Community Objectives | 1 | |
| Total | 13 | |
| Priority (High/Med/Low) | High | |