



Section 2 Executive Summary

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2.1 Overview

On October 30, 2000, the President signed into law the Disaster Mitigation Act of 2000, also known as DMA 2000. Among its other features, DMA 2000 established a requirement that in order to remain eligible for federal disaster assistance and grant funds, local and state governments must develop and adopt hazard mitigation plans. On February 26, 2002, the Federal Emergency Management Agency (FEMA) published an Interim Final Rule (IFR) that set forth the guidance and regulations under which such plans are supposed to be developed. The IFR provides detailed descriptions of both the planning process that states and localities are required to observe and the contents of the plan that emerges. This Morris County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan (the Plan) responds to those requirements.

Hazard mitigation is often defined as actions taken to reduce the effects of natural hazards on a place and its population. Morris County decided to develop this Plan because of increasing awareness that natural hazards, especially flood and wind, have the potential to affect people, physical assets, and operations in Morris County.

The purpose of a mitigation plan is to rationalize the process of determining appropriate hazard mitigation actions. The document includes a detailed characterization of natural hazards in Morris County; a risk assessment that describes potential losses to physical assets, people, and operations; a set of goals, objectives, strategies, and actions that will guide Morris County mitigation activities; and a detailed plan for implementing and monitoring the Plan.

This Plan focuses on six countywide hazards with the highest potential for damaging physical assets, people, and operations in Morris County. These hazards are flood, high wind–straight-line winds, earthquake/geological, dam failure, hazardous material releases–fixed sites, and severe storm–winter weather.

Both the risk assessment and mitigation action plan sections reflect this emphasis, which was the result of careful consideration by the Morris County Hazard Mitigation Steering Committee (MCHMSC).



Contact information for the Plan is:

Keith Heinburg, Deputy Emergency Management Coordinator
Morris County Office of Emergency Management
Courthouse, PO Box 900
Morristown, New Jersey 07963-0900
973.829.8602

2.2 Organization of the Plan

The Plan is organized to parallel the structure provided in the IFR. The Plan has 10 sections.

Section 1	Table of Contents
Section 2	Executive Summary
Section 3	Context
Section 4	Adoption and Approval
Section 5	Planning Process
Section 6	Hazard Identification, Profiling, and Ranking
Section 7	Risk Assessment
Section 8	Capability Assessment
Section 9	Mitigation Action Plan
Section 10	Plan Monitoring and Maintenance
Appendices	

There are references to the IFR throughout the Plan. Where possible, these provide specific section and subsection notations to aid the review process. The Plan also includes references to the FEMA crosswalk document, which is used in reviewing mitigation plans.

2.3 Hazards and Risks

2.3.1 Hazards

Sections 6 and 7 of this Plan include detailed descriptions of the process that was used to assess and prioritize Morris County's risks from natural hazards, quantitative risk assessments for Morris County as a whole, and more detailed assessments for certain asset classes. 16 hazards were initially identified and profiled by the MCHMSC. These are:

- Dam Failure
- Drought
- Earthquake/Geological
- Erosion-Hurricane/Nor'easter/Tropical Storm
- Extreme Temperatures-Cold
- Extreme Temperatures-Heat
- Flood
- Hail



- Hazardous Material Releases–Fixed Sites
- Hazardous Material Releases–Transportation
- High Wind–Straight-Line Winds
- High Wind–Tornado
- Ice Storm
- Landslide (non-seismic)
- Severe Storm–Lightning
- Severe Storm–Winter Weather
- Storm Surge–Hurricane/Nor’easter/Tropical Storm
- Wildfire

For each of these hazards, the profiles in Section 6 include:

- Description
- Geographical Extent
- Severity
- Impact on Life and Property
- Occurrence (probability)

After these initial 16 hazards were profiled, the MCHMSC used an evaluation system with five criteria to reduce the range of hazards to those with the most potential to impact Morris County. The criteria are also discussed in detail in Section 6. The criteria included: (1) History, (2) Potential for mitigation, (3) Presence of susceptible areas, (4) Data availability, (5) Federal Disaster Declarations and local emergency declarations.

As a result of this evaluation, the MCHMSC determined that six hazards present the greatest risk to Morris County and its residents; flood, high wind–straight-line winds, earthquake/geological, dam failure, hazardous material releases–fixed sites, and severe storm–winter weather. These hazards were further examined to determine the extent of the risk and to start to identify potential projects.

2.3.2 Risks

A risk calculation is a FEMA requirement. Risk is a numerical indication of potential future damages. Although, the range of events from winter weather to hurricanes, all have some potential to affect the Morris County area; flood, high wind–straight line winds, earthquake/geological, dam failure, hazardous material releases–fixed sites, and severe storm–winter weather are clearly the most significant countywide hazards, based on the criteria and experience.

These six countywide hazards were selected for much more detailed assessments and estimations of future damages. Section 7 includes details about calculation methodologies and the results of the countywide risk assessment, represented in Table 2.3.2-1.



Table 2.3.2-1:
Summary of Countywide Natural Hazard Risks in Morris County
By Asset and Hazard Type (100-Year Horizon)
(Sources: 2000 US Census, HAZUS)

Hazard	Asset	Risk (100-Year Horizon)	Risk Per SF (1)	Risk Per Capita (2)
Flood	Repetitive loss properties (residential)	\$12,782,929	\$12.96	\$10,372
Flood	Severe repetitive loss properties	\$5,699,788	\$43.18	\$34,544
Flood	Deaths and Injuries	Not Determined	NA	NA
High Wind–Straight-Line Winds	All assets	\$200,470,163	\$0.61	\$426
High Wind–Straight-Line Winds	Deaths and Injuries	Not Determined	NA	NA
Earthquake/Geological	All assets	\$391,555,092	\$1.18	\$833
Earthquake/Geological	Deaths (monetized) (3)	\$59,172,522	NA	NA
Earthquake/Geological	Injuries (monetized)	\$1,550,611	NA	NA
Dam Failure	All assets, direct damages	See Section 7.3.4	NA	NA
Hazardous Materials Release–Fixed Sites	All assets, direct damages	See Section 7.3.5	NA	NA
Severe Storm–Winter Weather	All assets, direct damages (4)	\$18,723,224	NA	NA
Severe Storm–Winter Weather	Deaths (monetized)	\$2,953,890	NA	NA
Severe Storm–Winter Weather	Injuries (monetized)	\$647,858	NA	NA

Notes: (1) Risk per square foot (SF) estimate for the flood hazard based on average building size of 2,000 SF. Risk per SF for the high winds and earthquake/geological hazards based on HAZUS estimate of total square footage for the county (See Table 7.3.2-6). (2) Risk Per Capita column based on Morris County 2000 population from the United States Census Bureau. Flood risk per capita based on household occupancy of 2.5 people per dwelling. (3) Winter storm risks are assumed to be primarily related to damages to public assets and infrastructure, to interrupted services, or to response requirements. (4) Standard FEMA practice is to express deaths and injuries in terms of dollars (monetized) in order that the risks can be compared to other categories that are not related to life safety. For further information, see FEMA Guidance titled *What is a Benefit?* (Included on BCA Toolkit version 3.0).

2.4 Goals, Objectives, and Actions

Section 9 of this Plan describes Morris County’s priorities for mitigation actions. The section divides the actions by priority, and describes the funding required, sources of funding, the level of support, and the timing of the action. The section also includes Morris County hazard mitigation goals and objectives.

2.4.1 Morris County Hazard Mitigation Goals

Goals are general guidelines that explain what Morris County wants to achieve. Goals are expressed as broad policy statements representing desired long-term results. Morris County mitigation planning goals include:

1. Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact



2. Improve data collection, use, and sharing to reduce the impacts of hazards
3. Improve capabilities, coordination, and opportunities at municipal and county levels to plan and implement hazard mitigation projects, programs, and activities
4. Pursue opportunities to mitigate repetitive and severe repetitive loss properties and other appropriate hazard mitigation projects, programs, and activities

Please refer to section 9.3.2 for more information on goals for the Morris County Hazard Mitigation Plan.

2.4.2 Objectives

Objectives are well-defined intermediate points in the process of achieving goals. (*Objectives* are generally coterminous with *strategies*.) Morris County mitigation planning objectives include:

- Increase awareness of risks and understanding of the advantages of mitigation by the general public and by local government officials
- Increase local government official awareness regarding funding opportunities for mitigation
- Improve data available to the county and participating communities for use in future planning efforts
- Provide government officials and local practitioners with educational opportunities and information regarding best practices for hazard mitigation planning, project identification, and implementation
- Acquire and maintain detailed data regarding critical facilities such that these sites can be prioritized and risk-assessed for possible mitigation actions
- Continue support of hazard mitigation planning, project identification, and implementation at the municipal and county level
- Support increased participation in the National Flood Insurance Program Community Rating System
- Support increased integration of municipal/county hazard mitigation planning and floodplain management with effective municipal/county zoning regulation, subdivision regulation, and comprehensive planning
- Provide for user-friendly hazard data accessibility for mitigation and other planning efforts and for private citizens
- Provide direct support, where possible to municipal mitigation programs
- Facilitate development and timely submittal of project applications meeting state and federal guidelines for funding for repetitive and severe repetitive loss properties and hardening/retrofitting infrastructure and critical facilities with highest vulnerability rankings
- Maintain and enhance local regulatory standards including full and effective building code enforcement, floodplain management, and other vulnerability-reducing regulations

Please refer to section 9.3.2 for more information on objectives for the Morris County Hazard Mitigation Plan.



2.4.3 Actions

Action Items are the specific steps (projects, policies, and programs) that advance a given objective. They are highly focused, specific, and measurable. Morris County mitigation actions include, but are not limited to:

- Acquisitions of flood prone properties in Rockaway Township
- Installation of check valves in storm water runoff system in Denville
- Community outreach programs in Boonton Township
- Structural retrofits of flood prone critical infrastructure in the Mendham Township
- Storm sewer infrastructure improvements in Mountain Lakes
- Engineering studies to improve drainage problems in Wharton Borough
- Generator installation in East Hanover fire department.

The above list is intended to be illustrative of the overall action items, rather than an exhaustive list. Please refer to section 9.3.3 for more information on municipality specific mitigation actions.

2.5 Planning Process

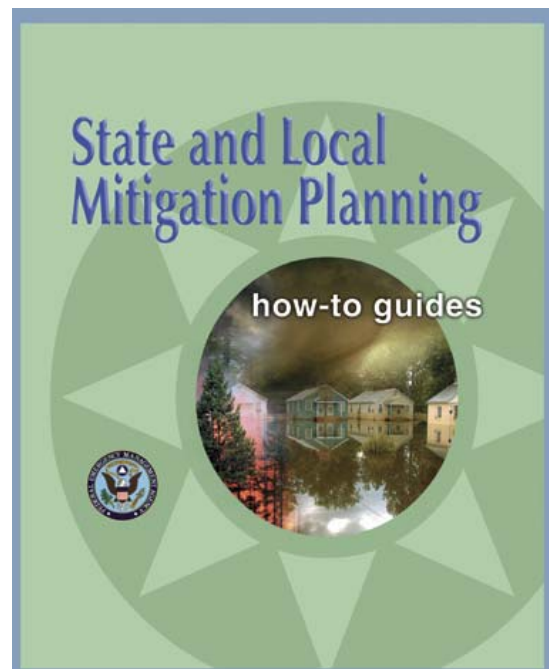
Section 5 provides details about the process that was used to develop this Plan. The process closely followed the guidance in the FEMA 386 series of planning guidance, which recommend a four-stage process for developing mitigation plans.

- Step 1 Organize resources
- Step 2 Assess risks
- Step 3 Develop a mitigation plan
- Step 4 Implement the plan and monitor progress

Step 1, organizing resources, is described in Section 5 (Planning Process). The section includes details about who was involved, the processes that were used to establish leadership and advisory groups, and public and other outreach and involvement efforts.

Step 2, the risk assessment, was completed by the MCHMWG. The Risk Assessment is included as Section 7 of the Plan, and is preceded by a separate Hazard Identification in Section 6.

Step 3, development of the Mitigation Plan is described in Section 5 (Planning Process) and Section 9 (Mitigation Action Plan). Section 5 includes details about who was involved, the processes that were used, and the products that were developed. Section 9 includes specific details about the identification and development of mitigation goals, objectives, and actions based upon Section 7 (Risk Assessment) and Section 8 (Capability Assessment).





Step 4, implementing the Plan, is described in the Mitigation Action Plan in Section 9, which includes details about who is responsible for implementation of specific strategies and actions; and in Section 10, the Plan Monitoring and Maintenance section, which describes long-term implementation through periodic updates and reviews.

2.6 Adoption and Approval

[NOTE TO NJOEM/FEMA REVIEWERS: The following dates will be filled in after these events take place. In addition, municipalities will have been provided adoption template language based upon the FEMA RII Toolkit model, following a review by the Morris County Counsel.]

The Morris County Office of Emergency Management (MCOEM), with the endorsement of the MCHMSC was responsible for recommending plan approval to Morris County Board of Chosen Freeholders. Consistent with that recommendation, the Morris County Board of Chosen Freeholders approved this Hazard Mitigation Plan on [Insert DATE]. Following adoption, the Plan was submitted to FEMA Region II. FEMA reviewed and approved the Plan on [Insert DATE]. Subsequently, the participating municipalities also adopted the Plan, submitted their adoption resolutions to FEMA, and received their own approval notifications (see Appendices Hand I).

Morris County and the following 39 municipalities participated in the Plan by taking an active part in the planning process, identifying mitigation actions, and will adopt the Plan:

- Boonton Town
- Boonton Township
- Butler Borough
- Chatham Borough
- Chatham Township
- Chester Borough
- Chester Township
- Denville Township
- Dover Township
- East Hanover Township
- Florham Park Borough
- Hanover Township
- Harding Township
- Jefferson Township
- Kinnelon Township
- Lincoln Park Borough
- Long Hill Township
- Madison Borough
- Mendham Borough
- Mendham Township
- Mine Hill Township
- Montville Township
- Morris County
- Morris Township
- Morris Plains Borough
- Morristown Town
- Mountain Lakes Borough



- Mount Arlington Borough
- Mount Olive Township
- Netcong Borough
- Parsippany-Troy Hills Township
- Pequannock Township
- Randolph Township
- Riverdale Borough
- Rockaway Borough
- Rockaway Township
- Roxbury Township
- Victory Gardens Borough
- Washington Township
- Wharton Borough

2.7 Implementation

The implementation process is described as part of the specific actions in the Mitigation Action Plan in Section 9.

2.8 Monitoring and Updating the Plan

Section 10 (Plan Monitoring and Maintenance) describes the schedule and procedures for ensuring that the Plan stays current. The section identifies when the Plan must be updated, who is responsible for monitoring the Plan, and ensuring that the update procedures are implemented. This section provides a combination of cyclical dates (oriented toward FEMA requirements) and triggering events that will initiate amendments and updates to the Plan. The Morris County Office of Emergency Management is responsible for monitoring the Plan and initiating the cyclical update process. The point of contact at Morris County is:

Keith Heinburg, Deputy Emergency Management Coordinator
Morris County Office of Emergency Management
Courthouse, PO Box 900
Morristown, New Jersey 07963-0900
973.829.8602