

## EXECUTIVE SUMMARY

The Burlington County Multi-Jurisdictional Hazard Mitigation Plan Update (HMP) was prepared in response to the Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 requires states and local governments to prepare all hazard mitigation plans and formally update them every five years in order to remain eligible to receive pre-disaster mitigation funds that are made available in the wake of federally-declared disasters, and to formally update those plans every five years. **To restate, by not participating in this process and adopting the resulting plan, the Plan participants will not be eligible to receive future pre-disaster mitigation funding for eligible mitigation projects (e.g. structural acquisitions and elevations, retrofits of critical infrastructure).** It is also important to remember that pre-disaster mitigation funds are separate and distinct from those federal and state funds used in direct post-disaster relief. The availability of those funds remains unchanged; if there is a federally-declared disaster in Burlington County, the affected municipalities will still receive immediate recovery assistance regardless of their participation in this plan.

The **Federal Emergency Management Agency (FEMA)** estimates that for every dollar spent on damage prevention (mitigation), twice that amount is saved through avoided post-disaster damage repair.

However, DMA 2000 effectively improves the disaster planning process by increasing hazard mitigation planning requirements for hazard events and requiring participating municipalities to document their hazard mitigation planning process and identify hazards, potential losses, and mitigation needs, goals, and strategies.

### Burlington County Plan Update Process

DMA 2000 requires states to submit comprehensive Hazard Mitigation Plans for approval to the Federal Emergency Management Agency (FEMA) to be eligible for future pre-disaster mitigation funding. Local entities must also develop plans and formally update them every five years. Burlington County developed their original HMP in 2007/08, which was formally approved by FEMA in August 2008 and subsequently adopted by the County and participating municipalities. This regulatory 5-year update of the 2008 plan began in 2012 when the County applied for federal funding to accomplish the update. Burlington County and all jurisdictions actively participated in the plan update process, and will work to implement the mitigation strategies identified in the plan update in an effort to reduce their vulnerability to natural hazards.

City/Towns	
Bass River, Township of	Medford, Township of
Beverly, City of	Moorestown, Township of
Bordentown, City of	Mount Laurel, Township of
Bordentown, Township of	Mt. Holly, Township of
Burlington, City of	New Hanover, Township of
Burlington, Township of	North Hanover, Township of
Chesterfield, Township of	Palmyra, Borough of
Cinnaminson, Township of	Pemberton, Borough of
Delanco, Township of	Pemberton, Township of
Delran, Township of	Riverside, Township of
Eastampton, Township of	Riverton, Borough of
Edgewater Park, Township of	Shamong, Township of
Evesham, Township of	Southampton, Township of

Fieldsboro, Borough of	Springfield, Township of
Florence, Township of	Tabernacle, Township of
Hainesport, Township of	Washington, Township of
Lumberton, Township of	Westampton, Township of
Mansfield, Township of	Willingboro, Township of
Maple Shade, Township of	Woodland, Township of
Medford Lakes, Borough of	Wrightstown, Borough of
<b>Special Purpose District</b>	
Burlington County College Schools	

To support the planning process for this plan update, the County and municipalities accomplished the following:

- Developed a municipal planning partnership including all municipalities in the County;
- Established and authorized a Steering Committee to support the plan update process;
- Reviewed and updated the hazards of concern identified in the 2008 plan;
- Updated the hazard profiles, including documenting events and losses since the 2008 plan;
- Updated the estimate of inventory at risk and potential losses associated with these hazards;
- Reviewed and updated the mitigation goals, objectives and actions that address the hazards that impact the area; and
- Updated the mitigation plan maintenance procedures to be executed upon approval of the plan from the New Jersey Office of Emergency Management (NJOEM) and FEMA.

As required by DMA 2000, the County has informed the public about these efforts and provided opportunities for public comment and input on the planning process. In addition, numerous agencies and stakeholders were contacted and some have participated as core or support members to provide input and expertise to the County’s mitigation planning efforts.

The County and all participating jurisdictions intend to incorporate mitigation planning as an integral component of daily government operations through existing processes and programs. The Draft Plan will be posted on the project website and all participating municipalities have made an effort to promote public review and input to the plan update. Updates to the plan will be similarly announced for annual plan reviews and 5-year updates.

**Burlington County Hazard Mitigation Plan Update Adoption**

This mitigation plan will be reviewed and adopted by the elected officials of all participating jurisdictions. A copy of the resolution regarding adoption of the plan is included as Appendix B.

**Burlington County Profile**

Burlington County is the largest county in New Jersey, covering 827 square miles, and extends from the Delaware River to the Great Bay. Burlington County is bordered to the north by Mercer County, to the northeast by Monmouth County, to the east by Ocean County, to the southwest by Atlantic County and to the west by Camden County. The Delaware River separates Burlington County from Pennsylvania to the west. The County has a total area of 529,351 acres including 5,191 acres of water. Forty municipalities exist within the County, consisting of three cities, six borough and 31 townships.

The Burlington County HMP Update provides a general overview of current and anticipated population and land use within the study area. This information provides a basis for making decisions regarding the type of mitigation approaches to consider and the locations in which these approaches should be applied. This information can also be used to support decisions regarding future development in vulnerable areas. For potential increases in vulnerability, the County and municipalities can plan ahead to mitigate those vulnerabilities early in the development process or can direct development to areas of lower risk. The participating jurisdictions will revisit the mitigation plan regularly to ensure that mitigation actions support sustainability in order to minimize risk and to support the identification and implementation of specific mitigation actions to address the potential impacts of development over time.

### Risk Assessment

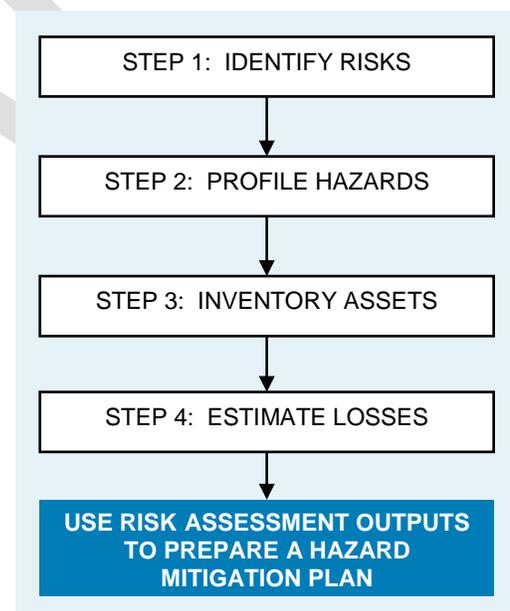
A key component of a mitigation plan is the accurate identification of risks posed by a hazard and the corresponding impacts to the community. The process of identifying hazards of concern, profiling hazard events, and conducting a vulnerability assessment is known as a risk assessment. The risk assessment portion of the mitigation planning process included the steps shown in Figure ES-1. Each of these steps is summarized below.

*Step 1:* The first step of the risk assessment process is to identify the hazards of concern. FEMA's current regulations only require an evaluation of natural hazards. Natural hazards are natural events that threaten lives, property, and many other assets. Often, natural hazards can be predicted, where they tend to occur repeatedly in the same geographical locations because they are related to weather patterns or physical characteristics of an area.

The 2008 HMP focused on a full range of natural hazards that could impact the area, and then identified and ranked those hazards that presented the greatest concern. The Steering Committee reviewed these hazards of concern, and based on review of all available information the following natural hazards of concern were selected to be addressed within this plan update:

- Coastal Erosion
- Drought
- Earthquake
- Flood
- Landslides
- Severe Storms
- Wildfire
- Severe Winter Storms

Figure ES-1. Risk Assessment Process



*Step 2:* The next step of the risk assessment is to prepare a profile for each hazard of concern. These profiles assist communities in evaluating and comparing the hazards that can impact their area. Each type of hazard has unique characteristics that vary from event to event. That is, the impacts associated with a specific hazard can vary depending on the magnitude and location of each event (a hazard event is a specific, uninterrupted occurrence of a particular type of hazard). Further, the probability of occurrence of a hazard in a given location impacts the priority assigned to that hazard. Finally, each hazard will impact different communities in different ways, based on geography, local development, population distribution, age of buildings, and mitigation measures already implemented. Hazard event and loss data

and information, particularly for events that have occurred since the 2008 plan, were integrated into this update.

*Steps 3 and 4:* To understand risk, a community must evaluate what assets they possess and which are exposed or vulnerable to the identified hazards of concern. Hazard profile information combined with data regarding population, demographics, general building stock, and critical facilities at risk prepares the community to develop risk scenarios and estimate potential damages and losses for each hazard.

For this risk assessment, loss estimates and exposure calculations rely on the best available data and methodologies. HAZUS-MH 2.0, a FEMA-developed GIS-based risk assessment tool, was used to estimate losses from earthquake, flood and wind (severe storm) hazards. Estimated losses for the 100-year flood (1%) and the 100-year/500-year (1%/ 0.2%) severe storm (wind) losses, and annualized earthquake losses, are provided in Tables ES-1 and ES-2, respectively.

ES-1. Summary of 100- and 500-year (1% and 0.2%) General Building Stock Losses (Buildings and Contents)

Municipality	Flood 1%	Severe Storm 1%	Severe Storm 0.2%
Bass River (T)	\$158,762,000	\$154,318	\$2,962,003
Beverly (C)	\$351,041,000	\$479,929	\$1,708,818
Bordentown (C)	\$611,161,000	\$627,501	\$3,398,007
Bordentown (T)	\$1,225,803,000	\$1,548,645	\$7,654,391
Burlington (C)	\$1,419,313,000	\$1,807,851	\$7,593,207
Burlington (T)	\$3,257,758,000	\$3,934,147	\$17,322,137
Chesterfield (T)	\$482,451,000	\$549,141	\$3,424,906
Cinnaminson (T)	\$2,375,176,000	\$3,406,602	\$12,127,904
Delanco (T)	\$484,972,000	\$669,730	\$2,346,132
Delran (T)	\$2,136,079,000	\$3,304,645	\$12,834,451
Eastampton (T)	\$712,944,000	\$1,183,308	\$6,878,200
Edgewater Park (T)	\$959,473,000	\$1,587,967	\$6,312,256
Evesham (T)	\$6,451,252,000	\$10,709,394	\$66,500,797
Fieldsboro (B)	\$72,125,000	\$86,223	\$379,174
Florence (T)	\$1,509,320,000	\$2,107,560	\$9,186,065
Hainesport (T)	\$839,062,000	\$982,703	\$5,634,614
Lumberton (T)	\$1,504,149,000	\$2,296,362	\$15,479,326
Mansfield (T)	\$1,954,839,000	\$1,388,861	\$15,443,283
Maple Shade (T)	\$2,346,098,000	\$4,423,676	\$20,254,781
Medford (T)	\$560,603,000	\$1,025,309	\$7,136,110
Medford Lakes (B)	\$3,746,510,000	\$5,566,083	\$38,802,642
Moorestown (T)	\$4,209,509,000	\$5,625,366	\$24,229,181
Mt. Holly (T)	\$1,650,406,000	\$1,876,325	\$11,210,691
Mt. Laurel (T)	\$6,985,988,000	\$10,560,323	\$52,585,049
New Hanover (T)	\$1,604,641,000	\$670,640	\$8,166,556
North Hanover (T)	\$685,211,000	\$714,968	\$5,512,851
Palmyra (B)	\$942,785,000	\$1,577,661	\$5,548,368

Municipality	Flood 1%	Severe Storm 1%	Severe Storm 0.2%
Pemberton (B)	\$187,379,000	\$202,708	\$1,660,510
Pemberton (T)	\$3,248,981,000	\$3,503,278	\$32,300,687
Riverside (T)	\$885,809,000	\$1,256,716	\$4,616,209
Riverton (B)	\$352,198,000	\$612,407	\$2,094,136
Shamong (T)	\$797,191,000	\$1,248,162	\$12,474,610
Southampton (T)	\$1,305,540,000	\$1,959,866	\$15,666,963
Springfield (T)	\$461,104,000	\$650,398	\$3,548,219
Tabernacle (T)	\$931,897,000	\$1,119,419	\$13,217,824
Washington (T)	\$108,601,000	\$55,433	\$1,224,191
Westampton (T)	\$1,326,163,000	\$1,584,986	\$8,054,625
Willingboro (T)	\$3,602,996,000	\$6,044,451	\$22,896,527
Woodland (T)	\$115,483,000	\$124,862	\$1,508,673
Wrightstown (B)	\$140,021,000	\$101,450	\$1,001,049
<b>Burlington County (Total)</b>	<b>\$62,700,794,000</b>	<b>\$87,329,374</b>	<b>\$490,896,123</b>

Source: HAZUS-MH MR4

ES-2. Summary of Estimated Annualized General Building Stock Earthquake Losses (Buildings and Contents)

Municipality	Total (Buildings + Contents)
Bass River Township	\$582
Beverly City	\$2,869
Bordentown City	\$5,670
Bordentown Township	\$10,342
Burlington City	\$12,302
Burlington Township	\$28,952
Chesterfield Township	\$4,065
Cinnaminson Township	\$18,882
Delanco Township	\$3,937
Delran Township	\$16,915
Eastampton Township	\$5,303
Edgewater Park Township	\$8,041
Evesham Township	\$45,897
Fieldsboro Borough	\$587
Florence Township	\$12,762
Hainesport Township	\$7,235
Lumberton Township	\$11,165
Mansfield Township	\$17,213
Maple Shade Township	\$18,835
Medford Lakes Borough	\$3,035
Medford Township	\$25,726

Municipality	Total (Buildings + Contents)
Moorestown Township	\$34,859
Mount Holly Township	\$14,388
Mount Laurel Township	\$55,593
New Hanover Township	\$15,641
North Hanover Township	\$6,011
Palmyra Borough	\$7,390
Pemberton Borough	\$1,338
Pemberton Township	\$23,092
Riverside Township	\$7,038
Riverton Borough	\$2,842
Shamong Township	\$4,406
Southampton Township	\$8,119
Springfield Township	\$3,624
Tabernacle Township	\$5,000
Washington Township	\$592
Westampton Township	\$11,500
Willingboro Township	\$26,015
Woodland Township	\$572
Wrightstown Borough	\$1,458
<b>Burlington County (Total)</b>	<b>\$489,790</b>

Note: The HAZUS-MH earthquake model results are reported by Census Tract. In some cases, there is more than one municipality per Census Tract.

### Burlington County Planning Area Mitigation Strategy

The outcomes of the risk assessment, supplemented by Plan participant input, provide a basis to review past mitigation actions, future goals, and appropriate local mitigation actions.

### Mitigation Planning Goals and Objectives

The Steering Committee reviewed the mitigation goals identified in the 2008 plan, and elected to condense the previous 10 goals into 5 goals that mirror those found in the New Jersey State Hazard Mitigation Plan. In addition, nine objectives were developed by the Steering Committee to support all goals. By ensuring planning consistency between the State HMP and the 2013 Burlington County HMP update, the Steering Committee seeks to draw down the goals of the State HMP to the county and municipal levels. The following are the five mitigation goals that summarize the hazard reduction outcomes the planning area seeks to achieve:

- Protect Life
- Protect Property

#### The mitigation strategy portion of the plan includes:

- A summary and status of past and current mitigation efforts;
- Local hazard mitigation goals and objectives;
- Identification and analysis of mitigation measures and projects being considered;
- Mitigation strategy (goals and objectives);
- Mitigation action plan (summary of specific

- Promote a Sustainable Economy
- Protect the Environment
- Increase Public Awareness

### **Capability Assessment**

A capability assessment is an inventory of a community's missions, programs and policies; and an analysis of its capacity to carry them out. This assessment is an integral part of the planning process. It identifies, reviews, and analyzes local and state programs, policies, regulations, funding and practices currently in place that may either facilitate or hinder mitigation.

A capability assessment was prepared by each planning participant. By completing this assessment, each participant learned how or whether they would be able to implement certain mitigation actions by determining the following:

- The range of local and/or state administrative, programmatic, regulatory, financial and technical resources available to assist in implementing their mitigation actions; and
- Limitations that may exist on undertaking actions.

### **Identification, Prioritization, Analysis, and Implementation of Mitigation Actions**

This plan update process was focused on improving the County and local mitigation strategies, including objective consideration of their natural hazard risks and vulnerabilities, and the identification of appropriate projects or initiatives to mitigate those risks. Throughout the planning process, representatives of the Steering Committee, Burlington County GIS, Engineering, the consultant as well as FEMA worked directly with jurisdictions to assist with the development and update of their mitigation strategies, focused on identifying well-defined, implementable projects with a careful consideration of benefits (e.g. risk reduction, losses avoided), costs, and possible funding sources (including mitigation grant programs). Each participant identified appropriate local mitigation actions, along with the hazards mitigated, goals and objectives met, lead agency, estimated cost, potential funding sources and the proposed timeline.

### **Plan Maintenance Procedures**

Hazard mitigation planning is an ongoing process. Section 7 of this plan presents procedures for plan maintenance and updates through which the BCOEM, BCPD, and the Steering Committee will continue to support the implementation and maintenance of this plan.

To monitor implementation of the mitigation plan, the Steering Committee members will meet annually to discuss the status of plan implementation and will prepare a summary report of the plan status and any needed updates. The mitigation evaluation will address changes as new hazard events occur, as the area develops, and as more is learned about hazards and their impacts. The evaluation will include an assessment of whether the planning process and actions have been effective, whether development or other issues warrant changes to the plan or its priorities, if the communities' goals are being reached, and whether changes are warranted. In addition, the mitigation plan will be updated at a minimum within the 5-year cycle specified by DMA 2000.

### **Point of Contact**

To request information or provide comments regarding this plan, please contact the Burlington County Office of Emergency Management:

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