Gloucester County, New Jersey
Multi-Jurisdictional Hazard Mitigation Plan

Appendices

prepared by:

Gloucester County
Office of Emergency Management

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Appendices
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Appendix A
Acronyms

ABFE:	Advisory Base Flood Elevation
BCA:	Benefit-Cost Analysis
BFE:	Base Flood Elevation
BRS:	Biennial Reporting System
CAFRA:	Coastal Area Facility Review Act
CAMEO:	Computer Aided Management of Emergency Operations
CDBG:	Community Development Block Grant Program
CERCLIS :	Comprehensive Environmental Response, Compensation, and Liability Information System
CMP:	Comprehensive Management Plan
CRS:	Community Rating System
CZM:	Coastal Zone Management
DFIRM:	Digital Flood Insurance Rate Map
DLUR:	Division of Land Use Regulation
DMA 2000:	Disaster Mitigation Act of 2000
DPCC:	Discharge Prevention, Containment, and Countermeasure
EF-Scale:	Enhanced Fujita Scale
EPA:	United States Environmental Protection Agency
EPCRA:	Emergency Planning and Community Right-to-know Act
ERNS:	Emergency Response Notification System
ESF:	Emergency Support Function
FEMA:	Federal Emergency Management Agency
FIRM:	Flood Insurance Rate Map
FIS:	Flood Insurance Study
FLP:	Forest Legacy Program
FMA:	Flood Mitigation Assistance Grant Program
F-Scale:	Fujita Tornado Scale
GARCES:	Governor's Advisory Council on Emergency Services
GCIA:	Gloucester County Improvement Authority
GCOEM:	Gloucester County Office of Emergency Management
GIS:	Geographic Information System

GSP:	Garden State Parkway
HAZUS:	Hazards US
HIRA:	Hazard Identification and Risk Assessment
HMGP:	Hazard Mitigation Grant Program
HMP:	Hazard Mitigation Plan
HMSC:	Hazard Mitigation Steering Committee
HMWG:	Hazard Mitigation Working Group
IBC:	International Building Code
IFR:	Interim Final Rule
IRC:	International Residential Code
JLWA:	James Lee Witt Associates
KCS:	Known Contaminated Sites
LQG:	Large Quantity Generator
LWCF:	Land and Water Conservation Fund
MAGNET:	Meadowlands Area Grants for Natural and Economic Transformation Program
MERI:	Meadowlands Environmental Research Institute
NCDC:	National Climatic Data Center
NDSP:	National Dam Safety Program
NFIP:	National Flood Insurance Program
NJAC:	New Jersey Administrative Code
NJBPN:	New Jersey Beach Profile Network
NJCF:	New Jersey Conservation Foundation
NJDA:	New Jersey Department of Agriculture
NJDEP:	New Jersey Department of Environmental Protection
NJDCA:	New Jersey Department of Community Affairs
NJDOT:	New Jersey Department of Transportation
NJDRP:	New Jersey Development and Redevelopment Plan
NJGIN:	New Jersey Geographic Information Network
NJGS:	New Jersey Geologic Survey
NJMC:	New Jersey Meadowlands Commission
NJOEM:	New Jersey Office of Emergency Management
NJTP:	New Jersey Turnpike
NOAA:	National Oceanic Atmospheric Administration
NWS:	National Weather Service

OEM:	Office of Emergency Management
OPA90:	Oil Pollution Act
OREIS:	Operation Respond Emergency Information System
PA:	Public Assistance Grant Program
PDM:	Pre-Disaster Mitigation Grant Program
PW:	Project Worksheet
RCRA:	Resource Conservation and Recovery Act
RFC:	Repetitive Flood Claims Grant Program
RL:	Repetitive Loss
RTK:	Right-To-Know Network
RTKHSL:	Right to Know Hazardous Substance List
SARA:	Superfund Amendments and Reauthorization Act
SDVR:	Southern Delaware Valley Region
SF:	Square Feet
SFHA:	Special Flood Hazard Area
SHMPU:	State Hazard Mitigation Plan Update
SHMT:	State Hazard Mitigation Team
SLOSH:	Sea Lake and Overland Surges from Hurricanes Model
SPCC:	Spill Prevention, Control, and Countermeasure
SRL:	Severe Repetitive Loss Grant Program
STAPLEE:	Social, Technical, Administrative, Political, Legal, Economic, and Environmental
TCPA:	Toxic Catastrophe Prevention Act
TIP:	Transportation Improvement Program
TRI:	Toxic Release Inventory
TSD:	Treatment Storage Disposal
UASI:	Urban Area Security Initiative
UCC:	Uniform Construction Code
USACE:	United States Army Corp of Engineers
USDOT:	United States Department of Transportation
USGS:	United States Geologic Survey
WRDA:	Water Resources Development Act

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Appendix B
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Appendix C
Planning Process

Contents of this Appendix

C.1 Meetings and Working Sessions

On the following pages are copies of agendas, sign-in sheets, presentation materials, and meeting notes where appropriate for the following meetings and working sessions:

- February 4, 2008 — Steering Committee Meeting
- February 19, 2008 — Steering Committee Meeting
- February 28, 2008 — Hazard Mitigation Working Group (HMWG) Kick-Off Meeting
- March 18, 2008 — Steering Committee Meeting
- April 15, 2008 — Steering Committee Meeting
- May 20, 2008 — Steering Committee Meeting
- May 29, 2008 — HMWG Meeting
- June 17, 2008 — Steering Committee Meeting
- August 5, 2008 — Steering Committee Meeting
- August 19, 2008 — HMWG Meeting
- September 19, 2008 — Steering Committee Meeting
- October 2, 2008 — HMWG Meeting

Pre-Disaster Mitigation- Competitive Grant

All Hazard Mitigation Planning

CONGRADULATIONS

So. Delaware Region

Camden

Gloucester

Salem

Cumberland

What is Hazard Mitigation?

Any action taken to reduce future disaster losses

Hazard Mitigation Examples

- Acquisition of homes
- Elevation of utilities
- Public education

Why develop an All Hazard Mitigation Plan?

- Reduce risk of future disaster losses
- An ounce of prevention is worth a pound of cure
- Eligibility for FEMA mitigation funding

"Hazard Mitigation Saves"

- Independent study of FEMA grants
- $1 in mitigation -> $4 saved
- 220 lives and 4700 injuries over 50 yrs

FEMA Funding

- **PDM** (Pre-Disaster Mitigation) Planning
- **HMGP** (Hazard Mitigation Grant Program)
  - Declared disaster funding
- **FMA** (Flood Mitigation Assistance)
  - Annual funding
- **SRL** (Severe Repetitive Flood Loss) 2007 Program
  - Annual funding
- **RFC** (Repetitive Flood Loss) 2006 Program
  - Annual funding No Plan needed

Getting Organized

- Seek municipal support
  - Kick-off meeting with Mayors and other interested parties
  - Letter of intent from each participating jurisdiction
  - Commitment for time and resources
  - 25 % match from all participants
  - Track time, dates and work performed on spread sheet

Continue Getting Organized

Think of potential planning team partners (members and roles)

Authority to make discussions

Don't Reinvent the Wheel

Identify existing plans, studies, etc
- Comprehensive plan, flood studies
- GIS information

Coordinate and tap resources
- Fed/state/local agencies, academic institutions

Request for Proposal
- Writing a proposal
- Evaluate the candidates
- Hire the firm and get started

Organize Plan by 5 steps

1. Establish planning process
2. Assess risks
3. Develop mitigation strategy
4. Maintain plan
5. Adopt plan

Step 1: Establish Planning Process

- Set up planning team
- Coordinate with resource agencies and stakeholders
- Review and incorporate existing materials
- Provide opportunities for public involvement

Step 2:
Assess Risks

- Identify all natural hazards
- Assess risk of natural hazards
- Inventory assets
- Determine vulnerability of assets to the natural hazards

Step 3:
Develop Mitigation Strategy

- Define goals and objectives
- Identify and analyze a comprehensive range of possible mitigation measures
- Develop an action plan for implementing mitigation measures

Step 4:
Maintain Plan

- Describe method and schedule for monitoring/evaluating/updating plan
- Provide for continued public involvement

Step 5:
Adopt Plan

- Plan must be formally adopted by the governing body of each / all jurisdictions
- Plan should be adopted after the rest of the Plan meets requirements

Heart of the Plan

Active participation by all jurisdictions

It's your plan!

Best available risk information

Strong mitigation strategy

SDVR steering committee meeting record, 2/4/08

Attendees:

- Stuart Wallace, JLWA
- Jim Manski, Cumberland OEM
- Anthony Buono, Cumberland GIS
- Sam Spino, Camden OEM
- Dave Polk, Salem OEM
- Len Clark, Gloucester OEM

SDVR steering committee meeting record, 2/19/08

Attendees:

- Stuart Wallace, JLWA
- Hal Cohen, JLWA
- Jim Manski, Cumberland OEM
- Anthony Buono, Cumberland GIS
- Sam Spino, Camden OEM
- Robert Kelly, Camden DPW
- Dave Polk, Salem OEM
- Len Clark, Gloucester OEM
- Tom Rafferty, NJOEM
- Stacy Murphy, NJOEM

General Information

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

WHAT IS HAZARD MITIGATION?

Natural hazards have the potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. While an important aspect of emergency management deals with disaster recovery – those actions that a community must take to repair damages and make itself whole in the wake of a natural disaster – an equally important aspect of emergency management involves hazard mitigation. Hazard mitigation measures are efforts taken before a disaster happens to lessen the impact that future disasters of that type will have on people and property in the community. They are things you do today to be more protected in the future. Hazard mitigation actions taken in advance of a hazard event are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage. With careful selection, hazard mitigation actions can be long-term, cost-effective means of reducing the risk of loss and help create a more disaster-resistant and sustainable community.

WHAT IS A HAZARD MITIGATION PLAN?

A Hazard Mitigation Plan is a well-organized and well-documented evaluation of the hazards that a jurisdiction is susceptible to, and the extent to which these events will occur. Hazard Mitigation Plans identify an area's vulnerability to the effects of the natural hazards typically present in a certain area, as well as the goals, objectives, and actions required for minimizing future loss of life and property damage as a result of hazard events. The primary purpose of mitigation planning is to systematically identify policies, actions, and tools that can be used to implement those actions.

PURPOSE AND NEED FOR THE PLAN

Hazard mitigation plans are developed BEFORE a disaster strikes. The plans identify community policies, actions, and tools for long-term implementation to reduce risk and potential for future losses. Adopted, implemented and maintained on an ongoing basis, these plans will gradually, but steadily, lessen the impacts associated with hazard events in the Southern Delaware Valley Region.

Under the U.S. Disaster Mitigation Act of 2000 (DMA 2000), as of November 1, 2004 communities that do not have a FEMA-approved hazard mitigation plan in place are no longer eligible for FEMA project grant monies under programs such as the Flood Mitigation Assistance Program (FMA), Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

OUTCOMES: IDENTIFYING MITIGATION PROJECTS AND OTHER BENEFITS

A major focus of this Hazard Mitigation Plan will be to identify effective mitigation projects and realistic implementation mechanisms for them, including identifying potential funding streams. This focus is applicable to projects that may be eligible for federal funding through FEMA grants or other sources, as well as to projects that may not qualify for federal funding but may still be important to a community. This planning process will help lay the groundwork for implementation of both federally fundable and non-federally fundable mitigation projects.

In addition to identifying and scoping effective mitigation projects, a Hazard Mitigation Plan will also assist the counties and municipalities of the South Delaware Valley Region in the following ways:

- Enhanced coordination of hazard mitigation with comprehensive planning and zoning,
- An increased understanding of the nature of the natural hazards the region faces and our exposure to them,
- Development of more sustainable and disaster-resistant communities,
- Eligibility for federal funds for pre-disaster mitigation planning under DMA 2000,
- Partnerships that support planning and mitigation efforts and may offer potential financial savings, including: reduced flood insurance premiums, broader resources for funding of mitigation projects, and enhanced benefit-cost ratios for U.S. Army Corps of Engineers projects, and
- Reduced long-term impacts and damages to human health and structures, and reduced repair costs.

Proactive mitigation leads to the development of sustainable, cost-effective projects. In contrast, reactive mitigation tends to yield “quick-fix” alternatives that may cost much and accomplish little. Proactive mitigation is also far more cost-effective than paying to clean up and rebuild after disasters happen. Danger to population and damage to property can be reduced if the region evaluates where and how disasters may occur, and takes steps to reduce those risks.

PARTICIPATION

Jurisdictions located within the Southern Delaware Valley Region (which includes Camden, Cumberland, Gloucester, and Salem counties) who wish to be recognized by FEMA as being compliant with the U.S. Disaster Mitigation Act of 2000 (DMA 2000) must either: (a) participate with the counties of the Southern Delaware Valley Region in the multi-jurisdictional plan development process and formally adopt the final plan, or (b) prepare their own hazard mitigation plan.

Elected and appointed government officials, business leaders, volunteers of non-profit organizations, citizens, and other stakeholders have been invited to participate in our four coordinated multi-jurisdictional plan development processes as part of our four planning committees: the ***PLANNING COMMITTEE NAME*** in Camden, the ***PLANNING COMMITTEE NAME*** in Cumberland, the ***PLANNING COMMITTEE NAME*** in Gloucester, and the ***PLANNING COMMITTEE NAME*** in Salem.

Citizens of the Southern Delaware Valley Region will have the opportunity to participate by attendance at the various public meetings. The dates of these meeting will be posted on the websites of the four participating counties.

Active participation in the process is the only way a jurisdiction can be seen in FEMA's eyes as a 'participating jurisdiction' that has met the requirements of DMA 2000 and is therefore eligible to apply for Federal funds for hazard mitigation projects. Participation includes attending meetings, providing feedback and reaching out to the public and other key stakeholders in the community, and adopting the final plan.

PROCESS OVERVIEW

The hazard mitigation planning processes will be conducted over the course of approximately one year, beginning in February, 2008. Key steps of the process include:

- Research a full range of natural hazard events.
- Identify the subset of significant hazards; these will be the focus of the plan.
- Identify the location and extent of hazard areas.
- Identify assets located within hazard areas.
- Characterize existing and potential future assets at risk by analyzing land uses and development trends
- Assess vulnerabilities to the identified hazards.
- Identify local, state, and Federal capabilities that support hazard mitigation.
- Develop a mitigation strategy by evaluating and prioritizing goals, objectives, and hazard mitigation actions.
- Adopt the plan.
- Implement the Plan and monitor its progress.

While natural disasters cannot be prevented from occurring, the continued implementation of our hazard mitigation plan over the long-term will gradually, but steadily, lessen the impacts associated with hazard events in our region.

Planning Group Information

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

Planning Group Organizational Structure

Here we need to list out the participants of the planning committees for each county …

Other NJ HMPs used "Jurisdictional Assessment Teams (JAT)" – if SDVA is doing so, we can leave the below text, if not, we need to describe your organization.
The JATs will include representatives from the individual participating jurisdictions. The JATs will be responsible for local community involvement in the multi-jurisdictional mitigation plan. All participating jurisdictions must:

- Coordinate and facilitate local efforts
- Attend meetings
- Provide information and feedback
- Involve the public and community stakeholders in the planning process
- Assess mitigation alternatives
- Select a course of action to be followed for their communities
- Adopt the plan
- Implement the plan and monitor its progress

Consulting Team
James Lee Witt Associates (JLWA), part of the Global Options Group, is the lead consultant for this project.

Founded in 2001, JLWA is a leading public safety and crisis management consulting firm based in Washington, D.C., with regional offices in Atlanta, Chicago, Little Rock, Sacramento and New Jersey. Nationwide, Global Options, Inc. has over 500 employees who are engaged on a wide range of security services and disaster-related efforts.
JLWA has unrivaled experience and hands-on knowledge of public safety, security, communications, and policy issues; and advises private sector businesses, universities, utilities, hospitals, and governments, including governors, members of congress, administration officials, and state and local elected officials, on various matters regarding federal, state and local emergency management, policies and programs. The JLWA team also has extensive experience developing vulnerability and risk assessments, hazard mitigation plans and mitigation projects for a wide variety of entities, including states and communities, universities, and private companies.

JLWA builds upon James Lee Witt's more than 25 years of leadership and experience in public service, including eight years as the Director of the Federal Emergency Management Agency (FEMA). During that period, Mr. Witt directed response and recovery operations for more than

350 disasters in all 50 states. In addition, Mr. Witt focused FEMA on programs to support hazard mitigation and emergency preparedness for local communities. The Disaster Mitigation Act of 2000, providing sweeping changes to the Stafford Act and the impetus for hazard mitigation planning in thousands of US communities, was also conceived and enacted under his guidance.

Vissering Pardue and Associates, Inc. (VPA) is providing consultation regarding risk assessment processes and benefit-cost analysis for development of the mitigation strategy. VPA was founded in 2006 as a consulting company specializing in hazard mitigation, program support and risk assessment. The firm operates from the DC metropolitan area but offers specialized services to federal, state, and local governments nationwide, as well as to engineering and planning firms. Prior to forming the company, both principals had extensive experience at FEMA's national headquarters during the 1990s – a key development period for the mitigation grant programs and with all aspects of mitigation planning.

Jeffrey S. Ward & Associates, Inc. (JSW) is providing consultation regarding hazard mitigation project implementation. JSW is a firm specializing in mitigation project evaluation, grant application development, and project implementation. The company, based on northern Virginia, was formed in 2001 and, since that time has been comprised of two principals who between them have over 20 years of mitigation experience under FEMA mitigation programs.

Princeton Hydro, Inc. (PHI) will be providing locally-based technical support for geographic information systems (GIS) and data management on the project. PHI has offices in Hunterdon County and Camden counties, New Jersey. Princeton Hydro has worked with a variety of state, municipal and other local partners throughout the State, including Bergen, Camden, Mercer, Monmouth and Somerset counties. PHI's GSI staff use the latest software and have degrees in geography. Employing a number of GIS interactive tools, PHI's clients can utilize data and interpretation of geographic features to make informed decisions regarding land use planning and the conservation of natural resources.

CMX, Inc. is providing locally-based technical support for civil engineering and hydrologic analyses to support the identification and documentation of flood-related hazard mitigation projects. CMX is a national engineering and consulting firm headquartered in Manalapan, New Jersey dedicated to providing full-service solutions for complex engineering and design projects. The firm draws upon more than 1,100 experienced professionals located in offices in New Jersey, New York, Pennsylvania, Maryland and elsewhere. CMX offers a wide variety of hydrologic, hydraulic and ecosystem engineering and permitting services. CMX has extensive experience working with New Jersey counties and communities and relevant experience for the engineering related aspects of flood mitigation throughout the mid-Atlantic area.

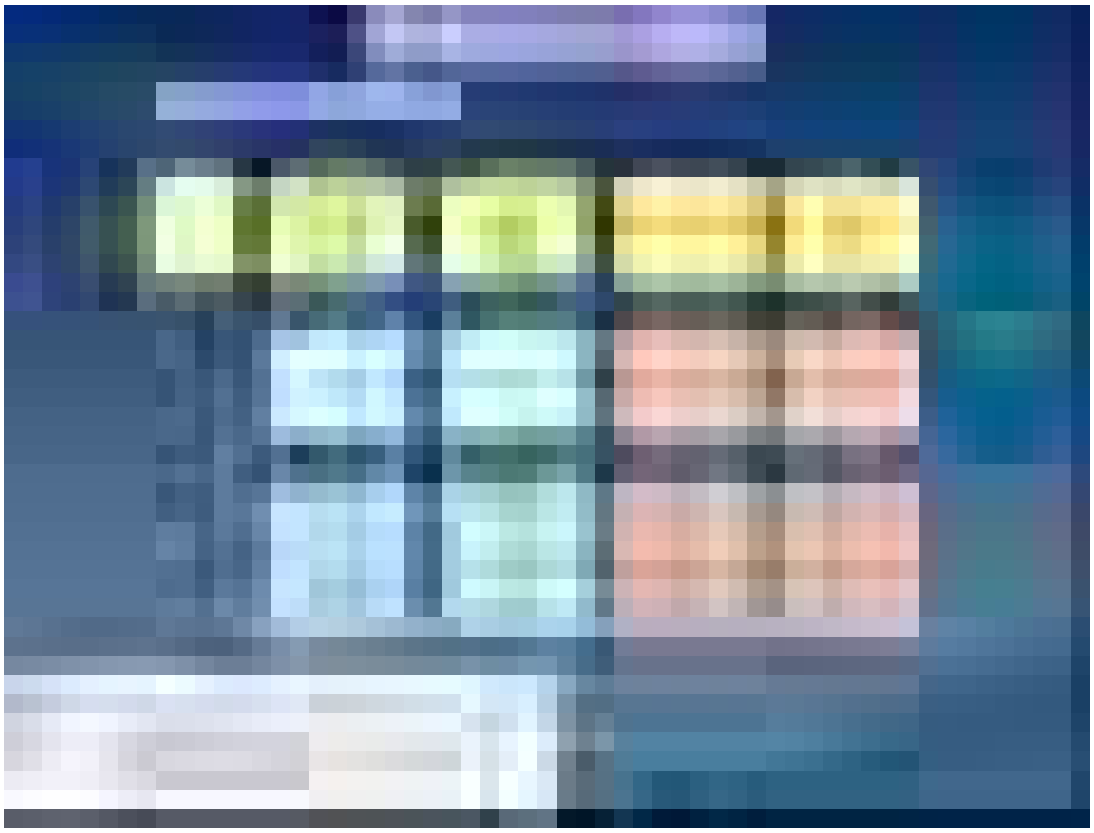
These firms have significant experience working together on New Jersey hazard mitigation planning projects. VPA, JSW, and Princeton Hydro are currently also teamed on hazard plans for the State of New Jersey and the City of Trenton; additionally, VPA, JSW, and Princeton Hydro are teamed with JLWA on hazard plans in Union and Middlesex counties.

Planning Group Work Chart

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

Planning Organizational Work Chart

We may or may not want to create charts like this one from Monmouth



Participating Jurisdictions

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

All ***how many?*** municipalities in the four Southern Delaware Valley Region Counties (Camden, Cumberland, Gloucester, and Salem) are represented by one or more municipal official.

Southern Delaware Valley Region Municipalities (by County)

Here we need to list out all the participating munis, in whatever level of detail you want … Monmouth and other NJ counties listed out all contact info (jurisdiction, contact name, ph, address, email)

Meeting Schedule

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

For the meeting schedules of each of the participating counties, please refer to the county websites:

Insert links below and populate meeting info on landing page, including all agendas, minutes, handouts, ppts, etc.:

Camden County

Cumberland County

Gloucester County

Salem County

The Draft Plans

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

The Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Planning processes are currently underway for the four participating counties. Draft Plans are scheduled for release in ***DATE***. Upon their release, the plans will be posted here and to the county websites for your review and comment. We thank you for your interest, and invite you to return to this web page to review the Draft Plans when they are completed.

Useful Links

Southern Delaware Valley Region Multi-Jurisdictional Natural Hazard Mitigation Planning Project

Need to set up hyperlinks below – Monmouth Co website has the landing page info

New Jersey State Police – Office of Emergency Management

- Home Page

Federal Emergency Management Agency

- Home Page
- Hazard Mitigation Division
- Disaster Mitigation Act of 2000
- Interim Final Rule, Feb. 2002
- Interim Final Rule, Oct. 2002
- Mitigation Planning Guidance
- How-To Guides & Other Publications
- FEMA Approved Mitigation Plans
- Mitigation Grant Programs
- Hazard Information

Contact Information

Southern Delaware Valley Region Multi-Jurisdictional Natural Hazard Mitigation Planning Project

Thank you for your interest! For questions or other feedback, please contact:

Camden County Office of Emergency Management
address
Phone
email

Gloucester County Office of Emergency Management
address
Phone
email

Salem County Office of Emergency Management
address
Phone
email

Cumberland County Office of Emergency Management
address
Phone
email

Press Releases

Southern Delaware Valley Region counties and towns preparing for next natural hazard

FOR IMMEDIATE RELEASE:

date

South Delaware Valley Region towns preparing for next natural hazard

Federal emergency management grant jumpstarts initiative

DATE LINE – The offices of emergency management of Camden, Cumberland, Gloucester, and Salem counties has begun cooperatively developing comprehensive all-natural hazards-mitigation plans for the four county South Delaware Valley Region and its number? municipalities.

"quote re: everyone working together – all the municipalities and our partners in neighboring counties," said someone important like a county OEM director.

The completed plans will include a risk assessment and a hazard-mitigation strategy that will identify regional, county and local projects that can reduce damage from future natural hazards. A primary outcome of these plans will be to identify and lay the ground work for implementing these mitigation projects – both those projects that are eligible for federal funding and those that may not qualify for federal funds but are of clear value to local communities. Additionally, these plans will identify mechanisms for integrating hazard mitigation into planning and zoning.

The primary natural hazard in the South Delaware Valley Region is flooding, but other potential hazards such as drought, extreme cold, extreme heat, snow, ice, hail, windstorms and tornadoes will be included in the planning process.

The vulnerability to various natural hazards will be determined based on existing and future buildings, infrastructure and critical facilities that might be impacted. Critical facilities include shelters and hospitals; infrastructure includes power-generation facilities, water utilities, roadways, railroads and communication systems.

"quote about what hazard mitigation planning gets you – reduced exposure, wiser use of the public's money, identification of effective projects and strategic pathways to getting them done, better integration of hazard mitigation into land use planning, etc." from a county exec or someone like that.

The Federal Emergency Management Agency (FEMA) awarded the four counties a multi-jurisdictional All Natural Hazards Mitigation grant in the amount of $amt in 200_. The four-county region has contracted with James Lee Witt Associates of Washington D.C. – part of the Global Options Group – for the full grant amount to develop the counties hazards mitigation plan in accordance with state and federal standards. The counties and their municipalities will contribute an additional $amt of in-kind staff services, bringing the project total to $amt.

The creation of this plan will allow the counties and their participating municipalities to be eligible for future mitigation funding from FEMA.

The risk assessment will include four phases:
1. identify hazards that may impact the counties and their municipalities;
2. profile the relevant hazards and their potential consequences;
3. identify assets that are subject to losses or damage, including physical structures, functions and populations; and
4. estimate the potential losses that could result from each type of hazard.

Following the risk assessment, the region will develop a hazard mitigation strategy. The strategy will include the identification of hazard mitigation goals as well as a prioritized list of actions designed to reduce losses.

A series of public meetings will be part of the plan development process, both to solicit public comment and to present the draft plan to residents and local officials.

Information about the All Natural Hazards Mitigation Plan will be posted on participating counties' Web sites at:
www.website.gov
www.website.gov
www.website.gov
www.website.gov

Mitigation Questionnaire

A regional planning partnership of counties, municipalities, agencies and stakeholders has recently been formed to address natural hazards that may occur in the Southern Delaware Valley Region. A steering committee has been selected to oversee this process. In order to identify and plan for future natural disasters, we need assistance from the residents of the Southern Delaware Valley Region. This questionnaire is designed to gauge the level of knowledge local citizens have about natural-disaster issues and areas vulnerable in your community to any type of natural disaster. The information you provide will help coordinate activities to reduce the risk of injury or property damage in the future.

This survey consists of 15 questions and will take approximately 5 minutes to complete.

GENERAL HOUSEHOLD INFORMATION

The following requested demographic information will aid the steering committee in determining the hazard mitigation needs of our community. For example, indicating whether you own a house or are a tenant will help determine the needs for both renters and homeowners. The answers provided in this section will be treated as confidential and will be used solely for the preparation of this plan and will not be provided to any other group or interest.

1. Please indicate your age range:

☐ 18 to 30 ☐ 31 to 40 ☐ 41to 50 ☐ 51 to 60 ☐ 60 or over

2. Gender: ☐ Male ☐ Female

3. Please indicate your highest level of education:

☐ Grade school/no schooling	☐ High School Graduate/GED	☐ College Degree
☐ Some High School	☐ Some College/Trade School	☐ Post Graduate degree

4. How long have you lived in the Southern Delaware Valley Region?

☐	Less than 1 year
☐	1 to 5 years
☐	6 to 9 years
☐	10 to 19 years

☐	20 years or more

5. Do you own or rent your place of residence? ☐ Own ☐ Rent

6. What is your zip code? ☐

7. What is your home address? Optional

NATURAL HAZARD INFORMATION

8. In the past 10 years, which of the following types of natural hazard events have you or someone in your household experienced within the Southern Delaware Valley Region and how concerned are you about the following natural hazards impacting the Southern Delaware Valley Region? (Please check all that apply)

Natural Hazard	Have Experienced	Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned
Drought	☐ Y ☐ N	☐	☐	☐	☐
Erosion -- Stream bed / Coastal	☐ Y ☐ N	☐	☐	☐	☐
Flooding - property	☐ Y ☐ N	☐	☐	☐	☐
Flooding - basement	☐ Y ☐ N	☐	☐	☐	☐
Flooding - 1st floor	☐ Y ☐ N	☐	☐	☐	☐
Natural Hazard	Have Experienced	Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned
Flooding - Street	☐ Y ☐ N	☐	☐	☐	☐

Hurricane / Tropical Storm	☐ Y ☐ N	☐	☐	☐	☐
Severe Storms (wind, lightening, hail)	☐ Y ☐ N	☐	☐	☐	☐
Severe Winter Storm	☐ Y ☐ N	☐	☐	☐	☐
Tornado	☐ Y ☐ N	☐	☐	☐	☐
Excessive Temperatures	☐ Y ☐ N	☐	☐	☐	☐
Groundwater Contamination	☐ Y ☐ N	☐	☐	☐	☐
Expansive Soils (due to ground swelling)	☐ Y ☐ N	☐	☐	☐	☐
Ice Storm	☐ Y ☐ N	☐	☐	☐	☐
Ice Jam	☐ Y ☐ N	☐	☐	☐	☐
Landslide	☐ Y ☐ N	☐	☐	☐	☐
Natural Hazard	Have Experienced	Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned
Groundwater Seepage	☐ Y ☐ N	☐	☐	☐	☐
Sink Holes	☐ Y	☐	☐	☐	☐

	☐ N				
Other	☐ Y ☐ N	☐	☐	☐	☐

9. Please rank how prepared you feel you and your household are for the probable impacts of natural hazard events likely to occur within the Southern Delaware Valley Region. Rank on a scale of 1 to 5, with 5 representing the most prepared.

☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Not Prepared				Most Prepared

10. Why do you think you are prepared for the probable impacts from natural hazard events that may occur within the Southern Delaware Valley Region? (Please check all that apply)

- ☐ Emergency preparedness information from a government source (e.g., federal, state, or local emergency management)
- ☐ Locally provided news or other media information
- ☐ Schools and other academic institutions
- ☐ Attended meetings that have dealt with disaster preparedness

Other please specify

11. Information on the impacts on how to prepare for a natural disaster can be disseminated to the public in various ways. Of the methods described below please identify the top three way which would be MOST EFFICTIVE in helping you make your home safer and better able to withstand the impact of natural hazard events.

Printed Media	**Public Forums**	**Television**	**Radio**
☐ Newspaper – Courier News	☐ Public Meetings	☐ TV News	☐ Radio News
☐ Newspaper – Star Ledger	☐ Workshops	☐ TV Advertisements	☐ Radio Advertisements
☐ Newspaper – Other	☐ Schools		
☐ Telephone Book			
☐ Informational Brochures			

Other Methods

- ☐ Outdoor Advertisements
- ☐ Fire Department/EMS Agency
- ☐ Church
- ☐ Public Library
- ☐ Internet
- ☐ Academic Institutions
- ☐ Books
- ☐ Chamber of Commerce
- ☐ Public Awareness timeframe (i.e. Flood Awareness Week, Winter Storm Preparedness Month)

Other (please specify) _____

12. To the best of your knowledge, is your property located in a designated floodplain?

☐ Yes ☐ No

☐ Not Sure

13. Do you have flood insurance? ☐ Yes ☐ No

14. Do you or did you have problems getting homeowners insurance? ☐ Yes ☐ No

NATURAL HAZARD MITIGATION

The term mitigation means to make something become less harsh or severe, to alleviate. Mitigation activities are those types of actions you can take to protect your home and property from natural hazard events such as floods, severe storms and excessive temperatures. The Southern Delaware Valley Region is preparing an All-Natural Hazard Mitigation Plan to formulate and document mitigation strategies that will aid our community in protecting life and property from the impacts of future natural disasters.

15. If your property were located in a designated “high hazard” area, or had received repeated damages from a natural hazard event, would you consider a ”buyout”, elevation of the structure, or relocation offered by a public agency?

☐ Yes ☐ No

Other Comments:

Southern Delaware Valley Region NJ Multi-Jurisdictional Hazard Mitigation Plan
General Schedule per Request for Proposal

February 19, 2008

#	Description (start / duration)	1/25/08	2/1/08	2/8/08	2/15/08	2/22/08	2/29/08	3/7/08	3/14/08	3/21/08	3/28/08	4/4/08	4/11/08	4/18/08	4/25/08	5/2/08	5/9/08	5/16/08	5/23/08	5/30/08	6/6/08	6/13/08	6/20/09	6/27/08	7/4/08	7/11/08	7/18/08	7/25/08	8/1/08	8/8/08	8/15/08	8/22/08	8/29/08	9/5/08	9/12/08	9/19/08	9/26/08	10/3/08	10/10/08	10/17/08	10/24/08	10/31/08	11/7/08	11/14/08	11/21/08	11/28/08	12/5/08	12/12/08	12/19/08	12/26/08	1/2/09	1/9/09	1/16/09
1	Organize (0 / 30)																																																			
2	Public Involvement (30 / 335)																																																			
3	Coordination (30 / 75)																																																			
4	Hazard Assessment (105 / 75)																																																			
5	Goal Setting (180 / 45)																																																			
6	Mitigation Activities and Mitigation Strategy (225 / 60)																																																			
7	Draft Plan (285 / 60)																																																			
8	Final Plan (345 / 20)																																																			

Southern Delaware Valley Region NJ Multi-Jurisdictional Hazard Mitigation Plan

General Schedule - Proposed Revision

February 19, 2008

#	Description (start / duration)	1/25/08	2/1/08	2/8/08	2/15/08	2/22/08	2/29/08	3/7/08	3/14/08	3/21/08	3/28/08	4/4/08	4/11/08	4/18/08	4/25/08	5/2/08	5/9/08	5/16/08	5/23/08	5/30/08	6/6/08	6/13/08	6/20/09	6/27/08	7/4/08	7/11/08	7/18/08	7/25/08	8/1/08	8/8/08	8/15/08	8/22/08	8/29/08	9/5/08	9/12/08	9/19/08	9/26/08	10/3/08	10/10/08	10/17/08	10/24/08	10/31/08	11/7/08	11/14/08	11/21/08	11/28/08	12/5/08	12/12/08	12/19/08	12/26/08	1/2/09	1/9/09	1/16/09
1	Organize																																																				
3	Coordination																																																				
4	Hazard Assessment																																																				
5	Goal Setting																																																				
6	Mitigation Activities and Mitigation Strategy																																																				
7	Draft Plan																																																				
x	NJOEM / FEMA Review (see note 1)																																																				
8	Final Plan																																																				
x	Working Group Milestone Reviews (see notes 2-5)																			✓								✓									✓																
2	Public Milestone Reviews (see notes 2 & 5)																			✓								✓									✓																
x	Steering Committee Meetings (3rd Tuesday unless noted)			✓		✓				✓				✓					✓				✓				✓					✓				✓				✓					✓				✓				✓

Notes:

(1) NJOEM / FEMA Review period is shown as 10 weeks (i.e., 50 working days +/-). This will need to include sufficient time for both NJOEM and FEMA reviews. We need to establish NJOEM review requirements as FEMA statutory review requirements = 45 days per DMA 2000.

(2) Working Group and Public Milestone Reviews are shown at three points in the project (it is assumed the four (4) county Working Groups will be able to meet and Public meetings held within these three (3) week windows):

Late May / Early June: Working Group and Public reviews of Hazard Assessment results (Task 4) and development of preliminary goals and objectives (Task 5)

Late July / Early August: Working Group and Public reviews of work-in-progress for Mitigation Activities and Strategy (Task 6)

Late September / Early October: Working Group and Public reviews of work-in-progress for the Draft Plan (Task 7)

(3) It is assumed Working Group milestone reviews will be preceded by Steering Committee review. It is also assumed submittal of the Draft (and if necessary Final) version of the Plan for review by NJOEM and FEMA will also be preceded by Steering Committee review and approval.

(4) It is assumed other meetings of the four (4) county Working Groups may occur throughout this process but the three (3) milestone review windows shown are ones the JLWA team will prepare for and participate in.

(5) Public Milestone Reviews correspond to the Working Group Milestone reviews. It is assumed these events will be held on the same day or on successive days in each County. For example, the Working Group may meet in the morning or afternoon to review work-in-progress and approve content for discussion at Public meetings later the evening of the same day. If desired, it is also possible for the Working Group meetings to be conducted as public sessions (with care taken re: protecting the privacy of individual property owners that may be the subject of part of the discussion).

(6) October Steering Committee Meeting is shown one (1) week earlier than regularly scheduled date (in the week of 10.17.08) to approve submittal of Draft Plan to NJOEM / FEMA.

(7) December Steering Committee Meeting should be scheduled to coincide with receipt of review comments from NJOEM / FEMA

(8) The completion of the Final Plan (Task 8) will result in a document that is considered "approvable pending adoption". The process of securing adoption resolutions from participating jurisdictions will occur after this point in the project.

Southern Delaware Valley Region, NJ Hazard Mitigation Plan

Grant Number:

Name:
Community:
County:
Reporting Period: 2/18/08 to 2/22/08

Insert Monday day in month/day/year format and the other entries are automatic.

Labor

Description	Mon 2/18/08	Tues 2/19/08	Wed 2/20/08	Thur 2/21/08	Fri 2/22/08	Total Hours	Rate	Subtotal Labor Cost
Project Coordination								
Working Group Meeting								
Document Review								
Other_____								
Other_____								
Other_____								
Other_____								
Other_____								
Hours per Day	**0**	**0**	**0**	**0**	**0**	**0**	**$0.00**	**$0.00**

Enter hours per activity per day

Rates for each individual / job category will need to be established per criteria to be provided

Expenses (attach receipts)

Description	Cost
Subtotal Expenses	**$0.00**

Eligible expenses will need to be identified by NJOEM / FEMA

Summary

Subotal Labor Cost	**$0.00**
Subtotal Expenses	**$0.00**
Total Labor Cost and Expenses	**$0.00**

This invoice covers work completed by James Lee Witt Associates for the period [month, year].

Task	Description	Contract Amount	Previous Percent Complete	Percent Complete this Invoice	Percent Complete to date	Amount Complete to date
1	Organize	$38,900	0%	0%	0%	$0
2	Public Involvement	$38,120	0%	0%	0%	$0
3	Coordination	$34,040	0%	0%	0%	$0
4	Hazard Assessment	$74,580	0%	0%	0%	$0
5	Goal Setting	$18,655	0%	0%	0%	$0
6	Mitigation Strategy	$101,040	0%	0%	0%	$0
7	Draft Plan	$54,640	0%	0%	0%	$0
8	Final Plan	$30,620	0%	0%	0%	$0
	Expenses	$29,295	0%	0%	0%	$0
	Totals	$419,890	0%	0%	0%	$0

Note: Values to be inserted in this column will be supported by descriptions provided in monthly progress reports.

Total Amount Complete to Date	$0
less previous invoices	$0
Total Due this Invoice	$0

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Monthly Progress Report Format
February 1, 2008

The following summarizes progress by James Lee Witt Associates for the development of the Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan for the period of [month(s)], [year]:

Work Accomplished during this period:

[JLWA to insert bullet list of work accomplished per the Scope of Work description including estimated percent complete for insertion in Invoice column marked "Percent Complete this Invoice"]

Problems encountered during this period (and proposed resolution):

[JLWA to insert summary description of any unanticipated problems encountered during this period including implications for project completion and proposed methods to resolve problems.

Note: Any problems of this kind will be immediately report to Gloucester County OEM at the time they occur and no resolutions that have implications for budgets or time schedule will be undertaken without written authorization.]

Work that is anticipated to be completed during the next reporting period, [month(s)], [year]:

[JLWA to insert bulleted list of work tasks to be undertaken and/or completed during the next month per the SOW]

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Hazard Assessment – Preliminary Scope of Work
February 19, 2008

Note: The following is an adaptation of the process we regularly employ to develop hazard assessments. This description should be considered as tentative pending review of the Mitigation 20/20 documents and the "wish list" data and information gathering process.

Based on a review of those materials, JLWA will provide a revised Hazard Assessment scope of work at the March Steering Committee meeting.

1. Identify Hazards: Hazards may include: drought; extreme cold; extreme heat; wildfires; flooding, land shifts due to earthquakes, landslides, erosion, subsidence or other physical disturbance; snow/ice/hail; dust/sand storms; wind storms; tornadoes, epidemics both human and animal, blights or infestations.

   As an on-going effort throughout the project, JLWA will also compile a list of additional natural hazards that could be considered in future updates of the Plan based on JLWA's observations, input from the Steering Committee, Working Groups and comments received from interested parties.

2. Profile Hazards: The natural hazards listed in Step 1 will be profiled by JLWA using available data to determine the historical occurrences and the extent/magnitude and probability of occurrence for the study area.

3. Inventory Assets: JLWA will use existing data sources to create an inventory of assets that are exposed to the hazards identified and profiled in the preceding steps. The inventory will be organized under the following three (3) categories:
   - publicly owned / operated facilities;
   - publicly owned / operated critical facilities; and
   - private sector properties.

   Note: It is assumed this planning effort will focus primarily on publicly owned and operated "critical facilities" (see definition in the next Note). Inventory efforts related to the entire listing of public facilities will be conducted to screen for additional facilities that should be considered as prime candidates for mitigation actions. The process will include overlays of listed public owned / operated facilities with the hazard profile information from Step.2. It is assumed that location information for these facilities will be provided by the Steering Committee and/or Working Groups.

   Note: "Critical facilities" refers to:
   - *critical government and emergency management facilities like police, fire and EMS stations;*
   - *utility corridors and facilities;*
   - *transportation infrastructure; and*
   - *schools, hospitals and locations where sensitive populations reside or congregate.*

   The information contained in these lists will be supplemented by JLWA preparing a questionnaire for distribution by the Steering Committee and/or Working Groups to critical facility managers.

   Note: Inventory for all "private sector" properties will be compiled from existing available data to be provided by Steering Committee and/or Working Groups or as available from public documents and websites (such as the US Census, the National Flood Insurance Program repetitive loss property listings, etc.). However, it is assumed that specific building locations and attributes for private sector structures will not be available for use during this study.

Note: JLWA will integrate considerations for designated historic properties and cultural resources into the plan, per FEMA 386-6. However, as indicated in the preceding note regarding private sector structures, identification of these properties and resources will also be based on information compiled from existing available data to be provided by the Steering Committee and/or Working Groups or as available from public documents and websites (such as the local historical society.

4. Estimate Losses: JLWA will use the results of Steps 2 and 3 to develop estimates of losses to existing assets for the identified hazards.

   Note: Depending on the available data, these estimates may be either qualitative or quantitative. Qualitative estimates will be stated as relative losses anticipated and are usually expressed in terms like high, moderate and low vulnerability or risk. Quantitative estimates can be expressed as the losses expected from a specific event (like a "100-year" flood) or, if sufficient data is available, as annualized monetized losses that would be expected for a given hazard type.

   Based on available data, losses for existing assets will be estimated and then accumulated for four (4) different components:
   - Casualties
   - Physical damage to structures
   - Damage to contents
   - Loss of function or use

   Note: For each hazard type, the methodology for estimating losses will be documented as part of the process along with tabulated and mapped results showing the relative vulnerability and/or risk. However, it is assumed that for this portion of the work, the estimates will be developed via GIS and/or tabular techniques.

   In addition, JLWA will use existing land use plans and documented growth trends to identify potential sources of future risk.

Deliverables and Milestones
- Hazard Identification
- Hazard Profiles
- Asset Inventory
- Loss Estimation for Identified Assets and Future Development

Note: Mapping and report text will be formatted as sections or subsections to be included in the Draft and Final versions of the Plan.

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Data and Information "wish list"
February 1, 2008

A. Data regarding the community																						
1. Digital base maps with political boundaries (including special districts like schools, utilities, etc.), water features, roads (by use classification and ownership), topography, soils, physical geography, etc.																						
2. Floodplain mapping and / or studies including Digital Flood Insurance Rate Maps (DFIRMs) if available, inundation maps from past hazard events																						
3. Studies, etc. (from organizations such as chamber of commerce, regional and/or local economic development authorities or councils of governments) that provide insight into development trends / patterns / rates (this could also include permit data from building departments in the various jurisdictions)																						
4. Any existing lists of self- or state- identified critical facilities including HSIP (Homeland Security Infrastructure Protection) lists that were developed over the past few year																						
B. Data regarding individual structures (public and private ownership)																						
1. Street address																						
2. Exact location (latitude/longitude and/or distinct planimetric feature in GIS)																						
3. Ownership																						
4. Age / date of construction																						
5. Construction type (i.e., wood frame, un-reinforced masonry, etc.)																						
6. Construction details (i.e., hazard specific information																						

regarding flood proofing features, wind rating of windows)																						
7. First floor elevation																						
8. Number of floors																						
9. Square footage (total and floor by floor if available)																						
10. Assessed value																						
11. Market value																						
12. Replacement value																						
13. Use, e.g., in general land use categories such as "office / commercial", "single-family residential", etc. but also designating facilities that would be considered critical facilities (which may include facilities included in A.4 above) such as police stations, fire stations, EMS facilities, hospitals, communications towers, etc.)																						
14. Occupancy (e.g., rated capacity per Fire Marshall for public and commercial buildings, etc.)																						
15. Contents in terms of what, where and value (obvious things that would be good to know is the location of electrical equipment relative to flood elevations for the presence of hazardous materials, etc.)																						
16. Estimates of annual operating budgets of public operations / facilities																						
17. Current status (i.e., occupied, unoccupied, inhabitable, etc.)																						
18. Insurance records (private, self-insured, State compilations, etc.) and/or any other records re: damages sustained from past hazard events including date, source of damages (i.e., hazard type), description and amount of damages to structures, contents and length of time the structure was out of service																						

19. Any past mitigation projects completed or currently contemplated for structures (including any related engineering studies)																						
C. Data regarding public infrastructure																						
1. Utility line locations, size / capacity, and type (above and below ground including party responsible for maintenance)																						
2. Sewer and water systems (including pump stations and any supporting infrastructure)																						
3. Flood management and pumping systems																						
4. Insurance records (private, self-insured, State compilations, etc.) and/or any other records re: damages sustained from past hazard events including date, source of damages (i.e., hazard type), description and amount of damages to facilities, contents and length of time the facility was out of service																						
5. Any past mitigation projects completed or currently contemplated for facilities (including any related engineering studies)																						
D. Other Plans and Studies																						
1. Regional, County and/or Municipal Comprehensive Land Use and/or Zoning Plans and/or Maps																						
2. Emergency Operations Plans, Continuity of Operations, Business Continuity Plans, Evacuation Plans, etc.																						
E. Miscellaneous information																						
1. Locations of facilities (and known transportation routes) that store or handle hazardous materials (some of which may show up as part of content listings for existing structures above per B.15).																						

2. Any demographic surveys or studies that would provide more current information about residents and/or property values than the 2000 US Census.																						

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
General Schedule and Work Plan
February 19, 2008

Tasks 1 & 2: Organize and Public Involvement

a. Per General Schedule - Proposed Revision, JLWA will prepare for and attend:

- Twelve (12) Steering Committee Meetings. Regular project status reports from JLWA and direction to JLWA for how to proceed with work-in-progress. JLWA will prepare and circulate agendas and review materials a minimum of one (1) week in advance. When acceptable and arranged in advance, some may be attended by JLWA via teleconference, e.g., November 2008 during NJOEM / FEMA reviews.
- Twelve (12) Working Committee Meetings and Public Meetings; three (3) @ for the four (4) counties. Linked meetings / presentations corresponding to major milestone reviews (Tasks 4, 5, 6 and 7) that are preceded by Steering Committee review; JLWA will assist in preparing for and conducting these meetings. Logistics will be handled by Steering Committee / County Coordinators.

b. JLWA Deliverables for Working Committee Meetings will include presentation materials for a "speaker's bureau" where members of the Working Committees can make presentations within their communities regarding the status and content of the Plan. JLWA will not be meeting formally with the Working Committees until late May / early June but if needed, JLWA can provide a basic presentation regarding the intent of the project and the planning process for use by Working Committee members prior to the first major milestone review.

c. JLWA Deliverables for press release and website content will include information to be reviewed today plus updates at each major milestone of the project.

Task 3: Coordination

a. Coordination activities identified in the RFP are underway but depend largely on the efforts of the Steering Committee to identify sources and facilitate contacts for JLWA.

b. JLWA is also working on a format for conducting a Capability Assessment as proposed. The focus is twofold: 1.) determine capability to identify and implement hazard mitigation projects and 2.) identify opportunities to integrate hazard mitigation into other on-going and/or established planning and implementation programs.

c. The assessment will be conducted at different tiers, i.e., federal, state, regional, county and local (see related discussion below under Task 4).

Task 4: Hazard Assessment (see separate scope of work description)

a. Natural hazards are the primary focus. Technological or manmade hazards will only be investigated as secondary effects of natural hazards (e.g., a hazardous materials handling site that is floodprone). The "wish lists" for data and information are integral to this process.

b. As part of the Capability Assessment process over the coming weeks, JLWA will look at how the counties and participating communities want to manage hazard and mitigation related data in the future. This will inform the decision about appropriate techniques to use for assessing risk.

c. The level of "resolution" in the assessments will be reflected in subsequent tasks:

- Regional
- County
- "Areas", i.e., multiple municipalities
- Municipalities

d. Risk assessment at this stage is a screening tool to identify candidate project sites. Subsequent efforts under Task 6 will refine risk information (to support analysis of benefits and costs) for selected project sites. The process is focused on finding realistic, attainable solutions.

e. Data limitations will be noted during the process and the Plan will include appropriate recommendations to address these limitations.

Task 5: Goals and Objectives

a. Goals and objectives reflect the Hazard and Capability Assessments.

b. Goals and objectives should be consistent with federal mitigation programs and the New Jersey State Hazard Mitigation Plan.

Task 6: Mitigation Activities and Strategies

a. Projects will include federal mitigation program candidates as well as projects and activities that will need to be implemented with local resources.

b. Projects will be "scoped", i.e., to the extent possible given the budget and available data, preliminary engineering, environmental impact evaluations, cost estimation and benefit to cost comparisons will be performed on the leading candidates for federal mitigation programs.

c. Identifying projects at the "area" or municipal level will depend on the information and input provided by community members and Working Group participants.

d. Activities include community outreach and education as well as plan integration efforts.

e. Plan maintenance procedures will be incorporated into the implementation strategies.

Task 7 & 8: Draft and Final Plan

a. The main sections for the document are assumed to include:

- Plan Adoption
- Planning Process
- Capability Assessment
- Hazards
- Hazard Profiles
- Vulnerability Assessments – Asset Inventories
- Loss Estimates – Existing Assets
- Loss Estimates – Future Development Trends
- Mitigation Goals and Objectives
- Mitigation Activities
- Implementation Strategy
- Plan Maintenance

b. As the project develops, the manner is which the risk assessment and implementation strategies for each county and participating community is presented will be determined.

Meeting Notes
3/18/08
SDVR NJ multi-jurisdictional HMPs
Gloucester Co. OEM, 1200 N Delsea Dr., Clayton NJ

[Color-coded action items: County coordinators; JLWA; NJOEM]

IN ATTENDANCE:

- Sam Spino, Camden Co. OEM
- Len Clark, Gloucester Co. OEM
- Jim Manski, Cumberland Co. OEM
- Anthony Buono, Cumberland Co. OEM
- Dominic Juliano, Salem Co. GIS
- Rick Westergaard, Gloucester Co. Plan Div.
- Dave Polk, Salem Co. OEM
- Greg Iuvarose (sp?), Gloucester Co. intern
- Stacey Murphy, NJOEM
- Pete Dennen, JLWA
- Stuart Wallace, JLWA
- Hal Cohen, JLWA

STATUS UPDATES & ACTIONS TAKEN

Status of local participation/LOIs

- Salem: all in
- Cumberland: all but 2 in
- Gloucester: all but 4 in
- Camden: majority in; Camden city and a few others outstanding

By 3/28: co. coordinators will provide JLWA a complete roster of local participants & contact info

By 3/28: co. coordinators will provide documentation of outreach efforts to date (e.g. to utilities, school districts, etc.)

The web text was been OK'd by the county coordinators at the meeting.

- by 3/24 Hal will email completed web text to Anthony

Re: the need to amend the schedule to allow for the 30-dat NJOEM review + the 45-day FEMA review, Len will check on whether there is a back-end lock on the schedule; if there is we will squeeze extra time into the front and reschedule some steering committee mtgs. FOLLOW UP: Len has already done this.

- JLWA will now adjust the schedule accordingly by 3/24

The next steering committee meeting is scheduled for 4/15 at 10am at the Gloucester Co. EOC. Pls. remember that this is only 1 month before the first substantive working group and public meetings on the HMP (to discuss the hazard assessments), so if there is groundwork that needs to be initiated to get scheduling, logistics, etc. underway, the county coordinators need to be on top of that.

ALSO PLS. NOTE: at the meeting, we had discussed JLWA's role in support of county working group meetings, specifically that JLWA would attend if possible or attempt to call in, but these meetings will be run by the coordinators with logistical and material support from JLWA. *However, it has since been pointed out to me that our contract specifies our direct involvement with the working group meetings, and it is the public meetings for which JLWA will definitely provide support, but only attend pending the level of scheduling concurrence between working group meetings and public meetings.* Ideally, if the working group meets in the a.m. and the public in the evening, we would be able to help run the working group, then refine any materials as necessary during the afternoon, and then help with the meeting in the evening as needed. Sorry for any confusion.

WEB-BASED SURVEYS

County coordinators will provide any comments regarding the municipal capability assessment survey to Hal by 3/28.

- Once this has been accomplished, JLWA will incorporate the changes and then launch the survey on SurveyMonkey and provide access information to the county coordinators.

JLWA will mock up a second survey re: hazard mitigation that is aimed at the general public (a la Monmouth's) using SurveyMonkey, and then JLWA will solicit feedback/additions from steering committee

ACCOUNTING AND GRANT-RELATED ISSUES

JLWA will revise the force-account / in-kind services spreadsheet to be a monthly accounting tool (rather than weekly)

JLWA will circulate estimates regarding hours required from counties and municipalities to hit match requirements

Stacy (NJOEM) will supply a standard HMGP hourly rate for force-account / in-kind services accounting

Stacy will double-check that SDVR grant-match hours do not have to be within the grant period of performance to count as match

It was confirmed that the non-HMGP in-kind hourly rates should include salary + benefits. Each County Coordinator needs to provide documentation supporting the calculations.

MEETING FEMA REQS.

We have yet to receive a response from FEMA re: written reqs. for [local] participation; therefore

- Len will email Hal the policy Gloucester is proposing to use re: reqs. for local participation, to include requiring completion of the capability assessment survey (on SurveyMonkey) as well as cooperation in providing data per the "wish lists" and participation in a minimum number of meetings;
- The other three county coordinators will approve Len's proposal and/or provide comments to Hal by 3/28

HAZARD IDENTIFICATION & RISK ASSESSMENT

County coordinators will be sure to inform their municipalities that any data satisfying the wish list needs must be received by JLWA by 3/28 in order to be used in the HMPs

By 3/28: county coordinators will review and approve (or propose changes to) the categorization of critical facilities proposed in the handout provided on 3/18 (3 pp., labeled "asset inventories – critical facilities.")

Once county coordinators receive consolidated lists of critical facilities at risk to hazard, the coordinators will (a) work with the municipalities filling in the required data regarding these facilities (modeled on the M20/20 data intake form), and (b) assign someone to take photographs of each facility that satisfy the specs laid out in the 3/18 hand-out labeled "asset inventories – critical facilities."

JLWA will internally establish a threshold for HAZMAT sites (so as to exclude small propane tanks, gas tanks, etc.)

DOCUMENTS & INFORMATION SHARING

Hal (JLWA) will post the following to the sharepoint site:

- the intro .ppt used by each of your counties,
- an up-to-date roster,
- the data wish list,
- a revised force-account / in-kind services spreadsheet;
- the HMGP in-kind services hourly rate
- a second survey intended for the general public

Southern Delaware Valley Region NJ Multi-Jurisdictional Hazard Mitigation Plan

General Schedule - Proposed Revision

March 18, 2008

#	Description (start / duration)	1/25/08	2/1/08	2/8/08	2/15/08	2/22/08	2/29/08	3/7/08	3/14/08	3/21/08	3/28/08	4/4/08	4/11/08	4/18/08	4/25/08	5/2/08	5/9/08	5/16/08	5/23/08	5/30/08	6/6/08	6/13/08	6/20/09	6/27/08	7/4/08	7/11/08	7/18/08	7/25/08	8/1/08	8/8/08	8/15/08	8/22/08	8/29/08	9/5/08	9/12/08	9/19/08	9/26/08	10/3/08	10/10/08	10/17/08	10/24/08	10/31/08	11/7/08	11/14/08	11/21/08	11/28/08	12/5/08	12/12/08	12/19/08	12/26/08	1/2/09	1/9/09	1/16/09
1	Organize																																																				
3	Coordination																																																				
4	Hazard Assessment																																																				
5	Goal Setting																																																				
6	Mitigation Activities and Mitigation Strategy																																																				
7	Draft Plan																																																				
x	NJOEM / FEMA Review (see note 1)																																																				
8	Final Plan																																																				
x	Working Group Milestone Reviews (see notes 2-5)																			✓								✓									✓																
2	Public Milestone Reviews (see notes 2 & 5)																			✓								✓									✓																
x	Steering Committee Meetings (3rd Tuesday unless noted)			✓		✓				✓				✓					✓				✓				✓					✓				✓				✓					✓				✓				✓

Notes:

(1) NJOEM / FEMA Review period is shown here as 10 weeks (i.e., 50 working days +/-). We have since been informed that NJOEM will require 30 days, and FEMA 45; we will discuss how to best address this today (3/18).

(2) Working Group and Public Milestone Reviews are shown at three points in the project (it is assumed the four (4) county Working Groups will be able to meet and Public meetings held within these three (3) week windows):

Late May / Early June: Working Group and Public reviews of Hazard Assessment results (Task 4) and development of preliminary goals and objectives (Task 5)

Late July / Early August: Working Group and Public reviews of work-in-progress for Mitigation Activities and Strategy (Task 6)

Late September / Early October: Working Group and Public reviews of work-in-progress for the Draft Plan (Task 7)

(3) It is assumed Working Group milestone reviews will be preceded by Steering Committee review. It is also assumed submittal of the Draft (and if necessary Final) version of the Plan for review by NJOEM and FEMA will also be preceded by Steering Committee review and approval.

(4) It is assumed other meetings of the four (4) county Working Groups may occur throughout this process but the three (3) milestone review windows shown are ones the JLWA team will prepare for and participate in.

(5) Public Milestone Reviews correspond to the Working Group Milestone reviews. It is assumed these events will be held on the same day or on successive days in each County. For example, the Working Group may meet in the morning or afternoon to review work-in-progress and approve content for discussion at Public meetings later the evening of the same day. If desired, it is also possible for the Working Group meetings to be conducted as public sessions (with care taken re: protecting the privacy of individual property owners that may be the subject of part of the discussion).

(6) October Steering Committee Meeting is shown one (1) week earlier than regularly scheduled date (in the week of 10.17.08) to approve submittal of Draft Plan to NJOEM / FEMA.

(7) December Steering Committee Meeting should be scheduled to coincide with receipt of review comments from NJOEM / FEMA

(8) The completion of the Final Plan (Task 8) will result in a document that is considered "approvable pending adoption". The process of securing adoption resolutions from participating jurisdictions will occur after this point in the project.

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Meeting Agenda
March 18, 2008

1. Miscellaneous Introduction & Housekeeping Items
   a) "Minutes" policy
   b) Emailing & cc'ing
   c) Website: sharepoint.jlwitt.com/southerndelaware; Login ="sdelawareuser" Password = "jlwa289"

2. General Schedule / Work Plan Status
   a) County-by-county update
   b) Overall status in work plan

3. Ongoing Issues
   a) Press Release and Website Content
   b) Support for Working Group Meetings
   c) NJOEM / FEMA Requirements
      - Working Group Composition
      - Participation Expectations and Requirements
      - 50% Completion Milestone
      - Force Account / In-Kind Services (form) – must be consistent with PDM application
   d) Miscellaneous Requests
      - SDVR Roster
      - List of Participating Municipalities and Jurisdictions
      - List of Working Group Members
      - Special Districts, Utilities, etc. Outreach
      - Purchase Order and/or Voucher for Invoicing
   e) Data requests ("wish lists") status
   f) Kick-off Meeting Reports
      - Cumberland County, February 21, 2008
      - Gloucester County, February 28, 2008
      - Salem County, ___
      - Camden County, ___
      - Documentation & sign-in lists
      - .ppt from Stacy Murphy

4. Next Steps
   a) Hazard Identification
      - Grant application
      - Request for Proposal
      - EOPs
      - State Plan / State Sources
      - Mitigation 20/20
   b) Risk assessment (Hazard Profiles, Asset Inventories and Loss Estimates)
   c) Mitigation 20/20 Critical Facilities lists
      - CF list-generating methodology
      - Filling in the rest of the form-data (M2020)
      - Proposed boxes/ binders/ files protocols (M2020)
      - Photo-reconnaissance
   d) Capability Assessment survey
5. Next Meeting (April 15 @ 10:00 am) / Action Items

Overview

An important part of the risk assessment process for multi-jurisdictional hazard mitigation plans includes assessment of vulnerability and risk to public facilities including what are defined as "critical facilities" per FEMA:

- Emergency Operation Centers, data storage centers which contain records or services that may become lost or inoperative;
- Fire Protection/Emergency-Fire and rescue companies including buildings and vehicles essential to providing emergency services, and ambulance companies.
- Power-Facilities for generation, transmission and distribution of electric power;
- Communications-Facilities for transmission, switching and distribution of telephone traffic;
- Water (including water provided by an irrigation organization or facility)-Facilities for the treatment, transmission and distribution of water by a water company supplying municipal water. In addition, water provided by an irrigation company for potable, fire protection or electricity generation purposes;
- Sewer and wastewater treatment-Facilities for collection, transmission and treatment of wastewater;
- Emergency Medical Care-Facilities which provide direct patient care to include hospitals, clinics, outpatient services, nursing homes, and housing for the elderly, which are likely to contain occupants who may not be sufficiently mobile to avoid the loss of life or injury;
- Facilities that produce, use or store highly volatile, flammable, explosive, toxic or water-reactive materials;

Identifying Facilities

JLWA will use the following sources to identify public and critical facilities to include in the SDVR counties Multi-Jurisdictional Hazard Mitigation Plans:

- Mitigation 20/20 entries made by communities;
- Default listings in FEMA's HAZUS-MH loss estimation program; and
- Specific facilities identified as part of data gathering ("wish list") activities under this planning project.

Data Inventory for Facilities Risk Assessments

This following describes the data required to perform risk assessments for facilities in New Jersey, as part of the hazard mitigation planning process. This data will be gathered from individual communities and participants through the use of a survey and technical support from JLWA:

General Information

- Facility name
- Facility location
- Description of use (note if critical facility)
- Annual budget
- Size in square feet
- Description and estimated replacement value of structure
- Description and estimated replacement value of contents

Flood Hazards

- First finished floor elevation or nearby ground elevation (not essential)
- Estimated cost to rent comparable space (on per square foot, per month basis)
- Flood loss history (insurance records, narrative descriptions, photographs)

Hurricane Wind Hazards

- ZIP code at site
- Building type (see below)

Tornado Hazards

- Building footprint dimensions (if a building)
- Occupancy by time of day

Building Type Determinations

For community and participants who are familiar with FEMA database / HAZUS-MH building type determinations (see list on the following page), this information can be recorded directly on the survey that will be circulated to the communities. For those who are not comfortable with these distinctions, providing a digital photograph that is oriented per the following example, will suffice.

Southern Delaware Valley Region, NJ Hazard Mitigation Plan

Grant Number:

Name:
Community:
County:
Reporting Period: 3/17/08 to 3/21/08

Insert Monday day in month/day/year format and the other entries are automatic.

Labor

Description	Mon 3/17/08	Tues 3/18/08	Wed 3/19/08	Thur 3/20/08	Fri 3/21/08	total		
Project Coordination						-		
Data Collection						-		
Working Group Meeting						-		
Document Review						-		
Other_____						-		
Other_____								
Other_____								
Other_____								
						Total Hours	Rate	Subtotal Labor Cost
Hours per Day	0	0	0	0	0	0	$50.00	$0.00

Enter hours per activity per day

Rates for each individual / job category will need to be established per criteria to be provided

Expenses (attach receipts)

Description	Cost
Subtotal Expenses	$0.00

Eligible expenses as identified by NJOEM / FEMA

Summary

Subotal Labor Cost	$0.00
Subtotal Expenses	$0.00
Total Labor Cost and Expenses	$0.00

South Del. Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plans
Hazard Identification – Preliminary Hazard List
March 18, 2008

Hazard	Type (1)	PDM Application	Co. EOPs	Mitigation 20/20	NJSHMPU (Draft) (3)	JLWA RFP	Include in MC HMP?
Aircraft Incidents	T						No
Air Pollution	T						No
Civil Disturbance	I			✓			No
Crime	I			✓			No
Dam Failure	T					✓	Yes
Drought	N			✓	✓	✓	Yes
Earthquake / Geological – surface faulting (4)	N			✓	✓		Yes
Economic Crisis	T			✓			No
Enemy Attack / Terrorism	I			✓			No
Extreme Temperature / Cold	N				✓		Yes
Extreme Temperature / Heat	N				✓		Yes
Flood	N			✓	✓		Yes
Hail	N			✓	✓		Yes
Hazardous Materials Release – Fixed Site	T			✓			Yes
Hazardous Materials Release – Transportation	T			✓			Yes
High Wind – Hurricane (5)	N			✓	✓	✓	Yes
High Wind – Tornado	N			✓	✓		Yes
Ice Storm	N						Yes
Landslide (non-seismic)	N			✓			Yes
Levee Failure	T					✓	Yes
Nor'easter / Coastal Storm - Erosion	N				✓	✓	Yes
Nor'easter / Coastal Storm - Storm Surge	N			✓	✓	✓	Yes
Pandemic Disease / Infestation	B			✓			No
Radiological Incident	T			✓			No
Railroad Incidents	T						No
Severe Storm - Lightning	N			✓		✓	Yes
Severe Storm – Winter Weather	N			✓	✓	✓	Yes
Utility Failure (gas, power, sewer, telecom, water)	T			✓			No
Urban Fire	I			✓			No
Wildfire	N			✓	✓	✓	Yes

Notes:

1. Type Legend: B = Biological; I = Intentional Acts; N = Natural; T = Technological / Manmade
2. NJSHMPU (Draft) = Draft State of New Jersey Hazard Mitigation Plan Update. Note: this document is still under review by FEMA Region II and subject to change.
3. Earthquake / Geological includes effects of surface faulting, ground shaking, earthquake induced landslides and liquefaction.
4. High Wind – Hurricane includes "straight line" winds due to Nor'easter / Coastal Storm, Hurricane, Severe Storm

Meeting Notes
4/15/08
SDVR NJ multi-jurisdictional HMPs
Gloucester Co. OEM, 1200 N Delsea Dr., Clayton NJ

[Color-coded action items: County coordinators; JLWA]

IN ATTENDANCE:

- Sam Spino, Camden Co. OEM
- Len Clark, Gloucester Co. OEM
- Jim Manski, Cumberland Co. OEM
- Anthony Buono, Cumberland Co. OEM
- Rick Westergaard, Gloucester Co. Plan Div.
- Dave Polk, Salem Co. OEM
- Pete Dennen, JLWA
- Hal Cohen, JLWA
- Jeff Ward, JSWA
- Anthony Mangeri, JLWA
- Bill Craney, NJOEM

Old/ongoing issues

Hal informed the county coordinators that the SharePoint site would begin to be populated with material, including the Critical Facilities lists for completion in cooperation with the municipalities.

Len noted that the CFR he circulated states that volunteer hours can be valued at the same rate as the subgrantee rate (instead of $24.40)

The county coordinators confirmed receiving email templates from Hal and force-account spreadsheets for March and April '08.

The county coordinators conformed that JLWA is green-lit to do pre-submission outreach to FEMA R2, in consultation with NJOEM.

Hal and the county coordinators discussed the status of various documentation issues, none of which are of a terribly time-sensitive nature but all of which need to be taken care of at some point.

Len noted that the press release was too complex for use in the target media in the area; Hal will provide a simplified alternate version of the press release within the next 2 weeks.

Anthony stated that the website should be live within the next 2 weeks.

Hal clarified to the county coordinators that outreach to special districts, utilities, etc. should happen ASAP so they can get involved in critical facilities vetting and participation in upcoming public meetings.

All counties now have their EOPs, cross-acceptance reports, and GIS data in.

All counties and municipalities are now "signed off" that they have provided all of the requested data that they had; anything that comes in subsequently will be identified for inclusion in the next HMP revision. The county coordinators will provide Hal an email memo to this effect ASAP for our records by the end of the week, if possible.

We did not discuss the online survey targeted to the general public, but Hal will mock this up in the next two weeks and submit it to the county coordinators for review.

Next/ ongoing steps

Hal reviewed the Hazard Identification matrix and informed the county coordinators of how it would be used in the plan; any comments regarding the Hazard Identification matrix are due back to Hal by the end of the week, if possible.

Jeff reviewed the HIRA (Hazard Identification/ Risk Assessment) process, with special focus on the effort to narrow hazards and identify FEMA-fundable projects, while also ID'ing projects that may be worth doing, but that may not be FEMA-fundable.

Much discussion was had over the source of flood-risk data – NFIP claims v IA v something else – b/c in many cases NFIP claims are not made, and in others no disaster declaration is made. Jeff noted that the best approach to all HIRA is (1) NOAA data, (2) NFIP data, and (3) talking directly to the people who know the situation on the ground … "ground truthing"

Cumberland noted issue of area in Greenwich with flooding and saltwater intrusion into wells; no IA filings b/c county not declared; DEP may want these properties to revert to wetland. Issue was noted in M 20/20.

Hal reviewed the Critical Facilities data-gathering process with the county coordinators, and the due dates were reiterated (completed data is needed back in by the beginning of May).

County lands (Camden) will get their own spreadsheet; Rowan U will as well

JLWA has created a column for "facil. owner" in the spreadsheet

Hal reviewed the Capabilities Assessment survey process with the country coordinators, and the due date for this was also noted (by mid-May).

Upcoming Meetings

The county coordinators began having discussions re: scheduling the first round of working group and public meetings (to review the preliminary Hazard Identification/ Risk Assessment results); these meetings will be calendared by the end of this week. The coordinators will work together to "cluster" these on the calendar to make JLWA support more efficient.

County cords will need to follow public notice/ sunshine laws and obtain a publisher's affidavit re: notice.

The next steering committee meeting is scheduled for 5/20.

Example Completed Line of the Critical Facilities Spreadsheet

FACILITY ID #	NAME	PRIORITY SITE? (Y/N)	PRIORITY SITE CRITERIA MET	COUNTY	MUNICIPALITY	SOURCE	USE	ADD.	ZIP	LAT	LONG
Garden City-06	Garden City Fire Dept./EMS	Y	4, 5, 7, 8, 9	Garden Co.	Garden City	HAZUS/ M2020	FIRE/ EMS	1500. S. Main	08000	39.6560	-75.0910

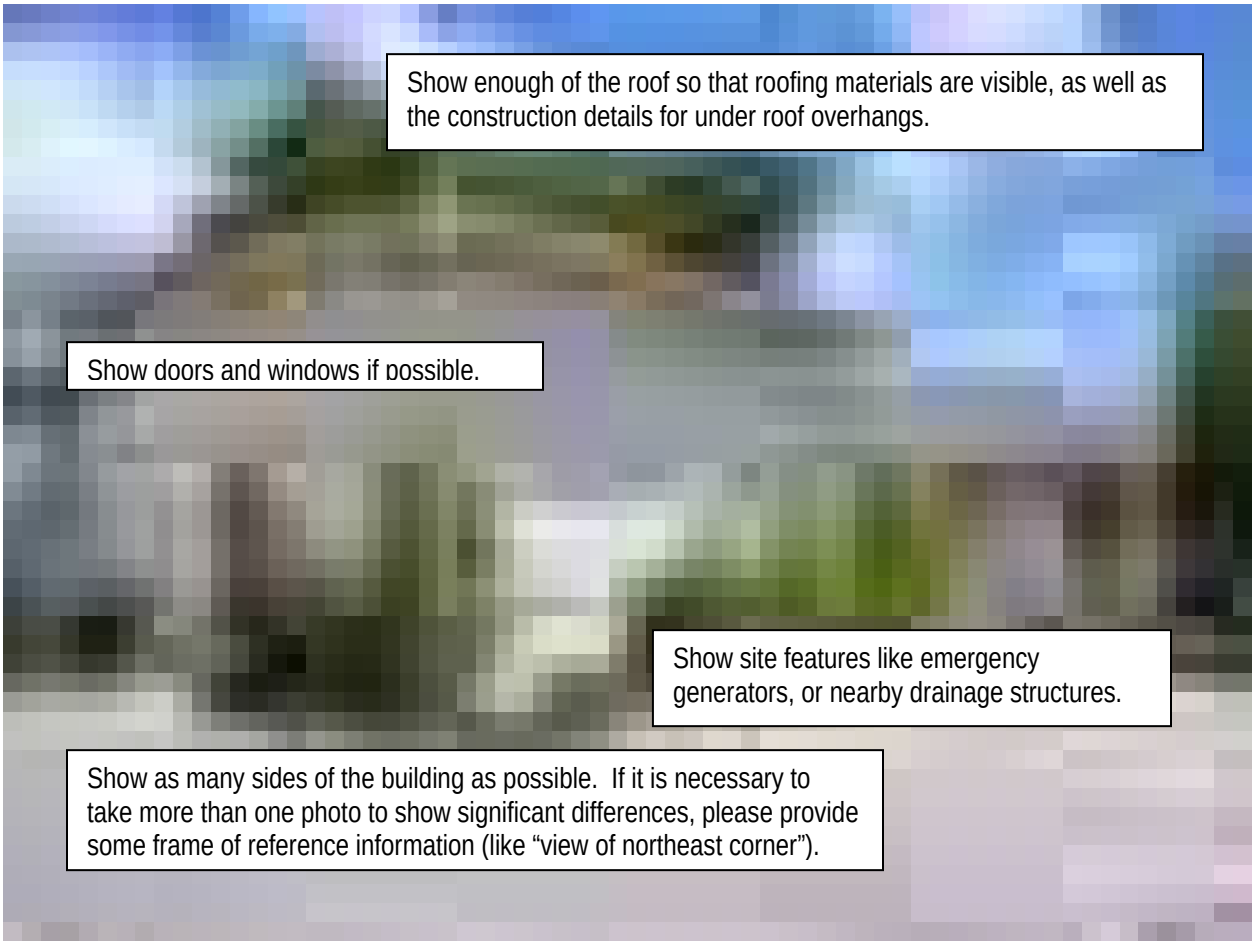
APPROX DATE OF CONSTRUC-TION	CONSTRUC-TION TYPE	AREA (SQ FT)	FOOTPRINT DIMENSIONS	STORIES	ANNUAL OPERATING BUDGET	BUILDING REPLACE-MENT VALUE	CONTENTS REPLACEMENT VALUE	DESCRIPTION OF CONTENTS
1978	*[do not fill in]*	4,800	2,400	2	$50,000	$600,000	$200,000	Communications equipment, 911 GIS, ladder truck

ESTIMATED OCCUPANCY, WEEKDAY	ESTIMATED OCCUPANCY, WEEKEND DAY	ESTIMATED OCCUPANCY, NIGHT	FIRST FLOOR ELEV	FLOOD ZONE	ESTIMATED COST TO RENT COMPARABLE SPACE (ON PER SQ FT, PER MONTH BASIS)	PREVIOUS DAMAGE HISTORY ($, DESCRIPTIONS, PHOTOGRAPHS, ETC.)	COMMENTS
4	4	2	16’	X	$5/mo/sf	$8,000 roof damage from heavy wind, 1998 – see attached insurance report and photos	

Instructions for County Coordinators to Take Photographs of Priority Critical Facilities

Draft 04-10-08

To enable the planning team to complete more detailed risk assessments for critical facilities, it is necessary to know construction details for individual buildings; providing one or more digital photographs of each priority facility will provide the necessary information. Please use the directions and example below, and please identify each photograph with the "Facility ID #" found in the left hand column (col. G) of the spreadsheet. (The photos will be used by the planning team to fill in the field for "Construction Type" (col. W).)



Instructions for Municipalities to Complete Asset Inventories for Critical Facilities

Draft 04-10-08

Introduction

The Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Plans are intended to identify projects that will reduce the risk of loss of life, injury or property damage from natural disasters. Leading candidate sites for hazard mitigation projects are "critical facilities." These include facilities such as EOCs, hospitals, power generation facilities, and others identified in detail below.

In order for the planning team to identify those critical facilities that are candidates for mitigation projects, a preliminary list of all critical facilities in each county has been developed from various sources, including Mitigation 20/20 reports, county OEM sources, and FEMA databases.

However, this preliminary list is almost certainly neither complete nor up-to-date, which is why input from municipalities is now essential.

Categorization (by Use) for Critical Facilities

The types of facilities that will be considered "critical" for this Plan was discussed and approved by the four county OEM directors. The basic definitions are as follows:

- Emergency operation centers (EOCs);
- Data storage centers that contain services or records that may become lost or inoperative;
- Fire protection and emergency medical services facilities, including fire and rescue companies, ambulance companies, and other buildings essential to providing emergency services;
- Police facilities;
- Emergency shelters;
- Emergency medical care facilities that provide direct patient care, including hospitals, clinics, outpatient services, nursing homes, and housing for the elderly;
- Dams, levees, floodwalls, seawalls, and other significant flood-control or storm-protection infrastructure.
- Power-generation facilities that serve in the generation, transmission and/or distribution of electric power (publicly owned, managed, or operated only);
- Communications facilities that serve in the transmission, switching and/or distribution of telephone and/or data traffic (publicly owned, managed, or operated only);
- Water facilities that serve in the transmission and/or distribution of water by a utility that supplies water for the purposes of drinking, irrigation, fire suppression, or electrical generation (publicly owned, managed, or operated only);

- Sewer and wastewater treatment that serve in the collection, transmission and/or treatment of sewerage and wastewater (publicly owned, managed, or operated only); and
- Facilities that produce, use or store highly volatile, flammable, explosive, toxic and/or water-reactive materials (HAZMATS) (publicly owned, managed, or operated only).

Your Part: Completing the Asset Inventories for Critical Facilities

As noted above, the planning team has identified an initial list of critical facilities for each community. That list includes structures primarily from the *first seven categories* listed above. We are asking for your help in proofreading that list, adding additional facilities as appropriate (particularly in the final five categories above), identifying high-priority mitigation sites, and supplying additional information about priority facilities.

Following are the tasks we are asking you to help with. Keep in mind that the quality of the analysis the planning team is able to produce depends almost entirely on the quality of data we are able to collect, and local jurisdictions are typically the most reliable sources.

Step 1. Validate the list that has been provided.

- Correct any erroneous or outdated information
- Indicate facilities that no longer exist in the "Comments" field (col. BP)
- Indicate facilities that are listed more than once in the "Comments" field (col. BP)
- Add entries for new or existing facilities that do not appear on the list
- Fill in incomplete information, indicated by cells marked with yellow high-lighter
- Add any facilities that your jurisdiction owns, operates, or manages from the last five categories listed above.

➔ To add new entries, please insert new rows at the bottom of the spreadsheet and assign a "Facility ID #" (col. G on the spreadsheet). ID numbers should be comprised of the name of your municipality and a two-digit number, beginning with the next available number in sequence (for example, if the last one provided in your list is "Quinton-16," you'd add on "Quinton-17," etc.).

Step 2. Fill in and proofread basic information for all entries, including new entries

- Fields for facility name (col. H), county (K), municipality (L), use (N), address (O), and ZIP (P) should be completed for all new entries, and proofread/validated for all existing entries.
- The "use" field (col. N) should be completed *only* with one of the following categories:
    - EOC
    - DATA STORAGE
    - FIRE/EMS
    - POLICE
    - SHELTER
    - MEDICAL FACIL.
    - DAM/LEVEE
    - POWER FACIL.
    - COMMUNICATIONS FACIL.
    - WATER FACIL.
    - WATER/SEWAGE FACIL.
    - HAZMAT

Step 3. Identify priority sites

Note that col. I ("Priority Site?") and col. J ("Priority Site Criteria Met") in the spreadsheet are shaded blue. These columns will help you determine whether a given facility is a priority site for potential mitigation. Depending on a facility's use, there will be different criteria for considering it a priority.

Identifying priority sites is a two-step screening process.

- If the facility meets any criteria listed above, mark a "Y" in the "Priority Site? (Y/N)" field (col. I).
- Then, in the "Priority Site Criteria Met" field (col. J), include the numbers for all criteria met by the facility. These criteria and their numbers are shown in the table below. Note that any facility receiving a "Y" in col. I must have at least one number marked in col. J.

Facility Use Category	Priority Site Criteria
Emergency operation centers (EOCs)	1. Include all EOCs
Data storage centers	2. Contains government or sensitive information, such as government records, health records, tax and/or payroll records. 3. Facilities with limited or no redundancy.
Fire protection and emergency medical services facilities	4. Headquarters or command center 5. Communications hub 6. Specialized emergency response (search/rescue, SWAT, etc.) 7. Primary facility of type in community 8. Known vulnerability (weaknesses in facility) and/or exposure to natural hazards 9. History of losses from natural hazards 10. Presence of significant type or volume of hazardous materials
Police facilities	11. Headquarters or command center 12. Communications hub 13. Specialized emergency response 14. Primary facility of type in community 15. Known vulnerability (weaknesses in facility) and/or exposure to natural hazards 16. History of losses from natural hazards 17. Presence of significant type or volume of hazardous materials
Emergency shelters	18. Primary shelter for jurisdiction 19. Capacity three times or greater than jurisdiction average 20. Long-term sheltering capability 21. History of losses from natural hazards 22. Known vulnerability (weaknesses in facility) and/or exposure to natural hazards

Facility Use Category	Priority Site Criteria
Hospitals and medical facilities	23. Include all emergency medical facilities in small jurisdictions Larger jurisdictions may want to limit; if so use the criteria below: 24. Trauma center 25. Primary facility of type in community 26. Number of beds is three times or greater than jurisdiction average 27. Known vulnerability (weaknesses in facility) and/or exposure to natural hazards 28. History of losses from natural hazards 29. Presence of significant type or volume of hazardous materials
Dams, levees, etc.	30. Large impoundment 31. Large exposed infrastructure or population downstream 32. History of losses from natural hazards 33. Known vulnerability (weaknesses in facility) and/or exposure to natural hazards
Power-generation facilities	34. Include all power facilities (publicly owned, managed, or operated)
Communications facilities	35. Major communications facilities only (publicly owned, managed, or operated)
Water facilities	36. Major water-supply facilities only (publicly owned, managed, or operated)
Sewer and wastewater treatment	37. Major water or wastewater treatment facilities, control/SCADA facilities, major pumps or other infrastructure only (publicly owned, managed, or operated)
HAZMAT sites	38. Include all HAZMAT sites (publicly owned, managed, or operated)

Step 4. Provide additional information on your priority sites

For all of the facilities where you marked a "Y" in col. I, indicating that it is a priority site, you will now fill in as many of the remaining fields as possible.

- Any field with a heading marked in light green indicates data that is available from Mitigation 20/20 forms, if the "source" field (col. M) is marked "M2020." Much of this data is already filled in for you; the remainder of this information can be found in the Mitigation 20/20 files and/or binders that you should have received soon after April 15.
- Many of the fields are self-explanatory; those needing some explanation are noted below:
  - ✓ The field for "Construction Type" (col. W) does *not* need to be filled in; your county coordinator will take a photograph of the building, and from this the planning team will determine what to enter in this field.
  - ✓ The field for "Area (Sq Ft)" (col. X) should be filled in with the entire floor area of the structure
  - ✓ The field for "Footprint Dimensions" (col. Y) should contain the dimensions of the ground floor of the structure (for example, "60 ft x 70 ft")
  - ✓ The field for "Annual Operating Budget" (col. AA) should reflect the total annual budget allocation to the structure and its functions; if this figure is not available, leave the field blank.
  - ✓ The field for "Building Replacement Value" (col. AB) should reflect the estimated cost to build a new structure that would serve the same purpose; if this figure is not available, leave the field blank.
  - ✓ The field for "Contents Replacement Value" (col. AC) is concerned mainly with expensive or specialized equipment; if this figure is not available, leave the field blank.
  - ✓ The field for "Description of Contents" (col. AD) is concerned mainly with expensive or specialized equipment.
  - ✓ The fields for "Estimated Occupancy" at various times of the week (cols. AE-AG) should be filled in with estimates of typical occupancies, not maximum occupancies or occupancy under special circumstances.
  - ✓ The field for "First Floor Elev" (col. AH) should be filled in with the average elevation off the ground of the first finished floor.
  - ✓ The field for "Flood Zone" (col. AI) should only be filled in with one of the following options, which correlate to FEMA Flood Insurance Rate Maps (FIRMs):
    - ANI = area not included in flood map
    - X = not in floodplain
    - X500 = in 500-year floodplain
    - A = in 100-year floodplain with no base flood elevations
    - AE = in 100-year floodplain with established base flood elevations
    - V = in coastal flood zone with no base flood elevations
    - VE = in coastal flood zone with established base flood elevations

- ✓ The field for "Estimated Cost to Rent a Comparable Space (on a per Sq Ft, Per Month Basis)" (col. AJ) should reflect the cost of renting a space to serve the same purpose; if this figure is not available, leave the field blank.
- ✓ The field for "Previous Damage History ($, Descriptions, Photographs, etc.)" (col. AK) should be filled in with a very brief summary of such information; if you have more complete information, including documentation, photographs, etc., these should be provided to the planning team separately.
- ✓ The field for "Comments" (col. BP) can be used to convey anything else you want to tell us about this facility, its exposure to hazard, or its mitigation needs.

- Note: if you have the time and interest, you are welcome to provide information for all the listed facilities, or any facilities that you are particularly interested in, regardless of whether it was identified as a priority site.

Step 5. Return the spreadsheet to your county OEM coordinator by APRIL 28, 2008.

Finally, please note the following as you work in the spreadsheets that have been provided

- Do not "hide" or "unhide" columns, as this can make the spreadsheets become cumbersome and confusing to work with
- Do not adjust the "frozen" panes (the top row and the left two columns). These are locked in place to help you stay oriented in these large spreadsheets.

County	Municipality	Completed Local Capability Survey	Has indicated additional departments involved in hazard mitigation
Camden	Audubon Borough		
	Audubon Park Borough		
	Barrington Borough		
	Bellmawr Borough		
	Berlin Borough		
	Berlin Township		
	Brooklawn Borough		
	Camden City		
	Cherry Hill Township		
	Chesilhurst Borough		
	Clementon Borough		
	Collingswood Borough		
	Gibbsboro Borough		
	Gloucester City		
	Gloucester Township		
	Haddon Heights Borough		
	Haddon Township		
	Haddonfield Borough		
	Hi-Nella Borough		
	Laurel Springs Borough		
	Lawnside Borough		
	Lindenwold Borough		
	Magnolia Borough		
	Merchantville Borough		
	Mount Ephraim Borough		
	Oaklyn Borough		
	Pennsauken Township		
	Pine Hill Borough		
	Pine Valley Borough		
	Runnemede Borough		
	Somerdale Borough		
	Stratford Borough		
	Tavistock Borough		
	Voorhees Township		
	Waterford Township		
	Winslow Township		
	Woodlynne Borough		

County	Municipality	Completed Local Capability Survey	Has indicated additional departments involved in hazard mitigation
Cumberland	Bridgeton City		
	Commercial Township		
	Deerfield Township		
	Downe Township		
	Fairfield Township		
	Greenwich Township		
	Hopewell Township		
	Lawrence Township		
	Maurice River Township		
	Millville City		
	Shiloh Borough		
	Stow Creek Township		
	Upper Deerfield Township		
	Vineland City		
Gloucester	Clayton Borough		
	Deptford Township	x	
	East Greenwich Township		
	Elk Township	x	DEQ, Planning Dept, PW, Building Dept, Engineer
	Franklin Township	x	PW, Police, Fire, EMS
	Glassboro Borough		
	Gloucester County	x	
	Greenwich Township	x	PW
	Harrison Township	x	
	Logan Township		
	Mantua Township	x	
	Monroe Township	x	Building Dept, OEM, Contracted Engineer
	National Park Borough	x	Planning Dept, PW, Building Dept
	Newfield Borough		
	Paulsboro Borough		
	Pitman Borough	x	DEQ, Planning Dept, PW, Building Dept
	South Harrison Township		
	Swedesboro Borough		
	Washington Township	x	Planning Dept, PW, Building Dept
	Wenonah Borough	x	
	West Deptford Township	x	
	Westville Borough		
	Woodbury City	x	
	Woodbury Heights Borough		PW, Building Dept
	Woolwich Township		

County	Municipality	Completed Local Capability Survey	Has indicated additional departments involved in hazard mitigation
Salem	Alloway Township		
	Carneys Point Township		
	Elmer Borough		
	Elsinboro Township		
	Lower Alloways Creek Township		
	Mannington Township		
	Oldmans Township		
	Penns Grove Borough		
	Pennsville Township		
	Pilesgrove Township		
	Pittsgrove Township		
	Quinton Township		
	Salem City		
	Upper Pittsgrove Township		
	Woodstown Borough		

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Meeting Agenda
April 15, 2008

1. Miscellaneous Introduction & Housekeeping Items
   a) Website: sharepoint.jlwitt.com/southerndelaware; Login ="sdelawareuser" Password = "jlwa289"

2. Old/ Ongoing Issues
   a) You should have received
      - Various email templates for use with municipalities & for other outreach
      - Force-account spreadsheets for March, April
   b) NJOEM Issues
      - Confirm that time logged by county staff before period of performance counts against the match
      - Pre-submission interaction with FEMA Region II
   c) Miscellaneous Requests & Documentation Issues
      - SDVR Roster (confirm all information)
      - Status of LOIs
      - List of Participating Municipalities and POCs (all in)
      - Kick-off Meeting Documentation & sign-in lists
      - Initial invitation letter templates
      - Press Release and Website Content – let H. Cohen know when these go live, plus future press releases
      - Special Districts, Utilities, etc. Outreach documentation
      - BCC H. Cohen on all future official invite/outreach emails
      - Circulation of participation expectations and requirements
      - Each county coordinator is responsible for providing documentation supporting staff benefits calculations, as part of the match
   d) Data requests ("wish lists") status
      - EOPs (all in)
      - Cross-acceptance reports (all in)
      - GIS data (all in)
      - Municipal data "sign-off"
      - County data "sign-off"
   e) General public survey

3. Next/ Ongoing Steps
   a) Hazard Identification and Profiling Process

- Review of Hazard ID worksheet, with comment on use of EOPs
- Next steps

b) Risk Assessment

- "Garden County, NJ" example and discussion of HIRA outcomes

c) Critical Facilities Risk Assessment Process

- How will work with municipal partners on this? (review of last week's call)
- Working with instructions (review of last week's call)
- Photo-reconnaissance (review of last week's call)
- Update on establishing a threshold to exclude small "hazmat" sites
- MUST BE COMPLETE BY APRIL 30, 2008 (so use earlier deadline with the municipalities)

d) Capability Assessment Survey (Municipalities)

- Status Report
- Filling out municipal survey (workshop-style) with municipal EM directors: http://www.surveymonkey.com/s.aspx?sm=ErL2wzQ4AMmirZrSd1zD3Q_3d_3d.
- Identifying additional municipal staff who should take the survey
- MUST BE COMPLETE BY MAY 16, 2008

e) Capability Assessment (County level)

4. Working Group & Public Meeting #1, Mid-May 2008

a) (Re-)Clarify JLWA support for Working Group Meetings v Public Meetings

b) JLWA will present draft materials related to Hazard ID/ Profiling & Risk Assessment for comment from the working group and the public

c) Scheduling: Ideally it is all one day …

- The working group meets in the morning
- JLWA makes any needed changes in the afternoon
- Public meeting happens in the evening

d) County Coordinator Role:

- Scheduling (avoiding conflicts, etc.)
- Invites out/ Public notice requirements met
- Logistics (Space, refreshments, AV, etc.)

5. Review Action Items

6. Next Steering Committee Meeting: May 20 @ 10:00 am

South Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plans
Hazard Identification – Preliminary Hazard List – as of April 15, 2008

Hazard	Type (1)	PDM Application	Camden EOP	Cumberland EOP	Gloucester EOP	Salem EOP	Mitigation 20/20	NJSHMPU (Draft) (2)	JLWA RFP	Include in MC HMP?
Aircraft Incidents	T		✓	✓	✓					N
Air Pollution	T		✓			✓				N
Civil Disturbance	I		✓	✓	✓	✓	✓			N
Crime	I						✓			N
Dam Failure	T	✓	✓	✓	✓				✓	Y
Drought	N	✓		✓	✓		✓	✓	✓	Y
Earthquake / Geological (3)	N						✓	✓		Y
Economic Crisis	T						✓			N
Enemy Attack / Terrorism	I			✓	✓		✓			N
Erosion – Hurricane/ Nor'easter/ Coastal Storm	N	✓					✓	✓	✓	Y
Extreme Temperature – Cold	N							✓		Y
Extreme Temperature – Heat	N							✓		Y
Flood (4)	N	✓	✓	✓	✓	✓	✓	✓		Y
Hail	N						✓	✓		Y
Hazardous Materials Release – Fixed Site	T		✓	✓	✓	✓	✓			Y
Hazardous Materials Release – Transportation	T		✓	✓	✓	✓	✓			Y
High Wind – Straight-line winds (5)	N	✓	✓	✓	✓	✓	✓	✓	✓	Y
High Wind – Tornado	N	✓		✓	✓		✓	✓		Y
Ice Storm	N	✓								Y
Landslide (non-seismic)	N						✓			Y
Levee Failure	T	✓	✓						✓	Y
Losses, fishing	N	✓								Y
Losses, crops	N	✓	✓			✓				Y
Pandemic Disease / Infestation	B		✓				✓			N
Radiological Incident	T			✓	✓		✓			N
Railroad Incidents	T		✓	✓	✓	✓				N
Severe Storm – Lightning	N						✓		✓	Y
Severe Storm – Winter Weather	N	✓		✓	✓	✓	✓	✓	✓	Y
Storm Surge – Hurricane/ Nor'easter/ Coastal Storm	N	✓					✓	✓	✓	Y
Utility Failure (gas, power, sewer, telecom, water)	T		✓	✓	✓	✓	✓			N
Urban Fire	I		✓	✓	✓		✓			N
Wildfire	N	✓	✓	✓	✓	✓	✓	✓	✓	Y

Notes:

1. Type Legend: B = Biological; I = Intentional Acts; N = Natural; T = Technological / Manmade
2. NJSHMPU (Draft) = Draft State of New Jersey Hazard Mitigation Plan Update. Note: this document is still under review by FEMA Region II and subject to change.
3. Earthquake / Geological includes effects of surface faulting, ground shaking, earthquake induced landslides and liquefaction.
4. Includes tidal, flash, and riverine flooding
5. High Wind – Straight-Line Winds includes winds due to hurricanes, tropical storms, nor'easters , coastal storms, and other severe storms, excluding tornados

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
May/June Working Group/ Public Meeting Draft Agenda
May 20, 2008

A. Welcome

B. Introduction to Hazard Mitigation & Hazard Mitigation Planning Process/Context

   1. "Hazard Mitigation 101" (.ppt)
   2. Where are we in the planning process? (.ppt)
   3. What are the next steps? (.ppt)

C. HIRA Process & Products

   1. Hazard Identification (.ppt)
   2. Risk Assessment Methodology (.ppt)
   3. Risk Assessment Results to date (.ppt)

D. Q&A

E. [Working Group only: some form of "approval" (TBD) of Table 6.3-1, 6.4-1]

F. [Working Group only – Prioritization exercise re: Critical Facilities]

G. Small group / individual discussion(s) with meeting participants (for example, "ground-truthing" maps & other risk assessment results

Meeting Notes
5/20/08
SDVR NJ multi-jurisdictional HMPs
Gloucester Co. OEM, 1200 N Delsea Dr., Clayton NJ

[Color-coded action items: County coordinators; JLWA]

IN ATTENDANCE:

- Sam Spino, Camden Co. OEM
- Len Clark, Gloucester Co. OEM
- Jim Manski, Cumberland Co. OEM
- Rick Westergaard, Gloucester Co. Plan Div.
- Diane Kozak, Camden Co. HTS
- Hal Cohen, JLWA
- Stuart Wallace, JLWA
- (Dave Polk, Salem Co. OEM, was briefed on 5/21)

Housekeeping issues

Hal again noted the new SharePoint password and explained the reason for the periodic changes

The county coordinators confirmed receiving email templates from Hal and force-account spreadsheets for May '08.

Old/ongoing issues

Stuart discussed the need for the county coordinators to pursue clarity w/ FEMA RII regarding the plan review period and its implications on grant deadlines; JLWA will also continue to work with NJOEM to confirm several administrative/policy issues.

Hal and the county coordinators discussed the status of various documentation issues:

- All counties now have their kick off meeting documentation and initial invite templates in; only a handful of LOIs remain to be collected.

- In several cases, the following remain outstanding: documentation of expectations for participating municipalities; documentation of outreach to special districts, utilities, etc.; documentation supporting grant-matching calculations for staff benefits; documentation of public notice for May/June public meetings.

- The county coordinators stated that the website is ready for approval; all agreed that the coordinators will get the approvals they needed from each other so that the website could be

LIVE by next Tuesday's public meeting; coordinators will inform Hal of the web address prior to that meeting

Hal updated the coordinators on the pace of return of Critical Facilities lists, and the coordinators updated on when more can be expected; Hal noted that the information received was not always consistent across responding jurisdictions, so we will do an exercise at the May working group meetings to finish the prioritization process.

Hal and the coordinators fixed the dealt with questionable dams that appears in HAZUS sources but not NJDEP; Camden and Salem will each one dam that had unknown status

Hal discussed the status of the Capability Assessments and urged the coordinators to reach out to participating municipalities to (a) get remaining OEMs to take the survey and (b) get other relevant staff to complete it; text to get (b) done was provided by Hal in an email 4/25

Hal discussed the plan for administering county-level Capability Assessments – this week Hal will schedule calls with the county coordinators

Hal informed the county coordinators that a survey is available for the general public; there was some discussion of what would happen to that survey when JLWA's contract is over, and it was determined that it would be easy to transfer to one of the counties, should that be desired

Plan doc

Hal and the county coordinators reviewed the prelim. drafts of the TOC, sec 6, sec 7, and appx a of the plan.

The following changes were made to table 6.4-1:

- Dam failure will be given a risk assessment in all four counties
- Levee failure will be given a risk assessment in Gloucester, Cumberland, and Salem
- Erosion will be given a risk assessment in Cumberland, and Salem

The county coordinators determined that the plan document would be distributed for review/comment to the county working groups; Hal will prepare a .pdf of the document and the coordinators will make it available to their working groups.

Upcoming Meetings

The first round of working group and public meetings to review the preliminary Hazard Identification/ Risk Assessment results were discussed.

An introductory .ppt for the meetings was previewed for the county coordinators

County coordinators agreed that at the working group meetings, participants would complete the Critical Facilities prioritization process and approve the plan document TOC and tables 6.3-1 and 6.4-1.

The main goals of the meetings will be (a) ongoing education and clarification of the plan purpose and process, and (b) “ground-truthing” the Hazard Identification/ Risk Assessment work done to date.

The next meeting will begin to engage mitigation projects and strategies

DATA SOURCE	Community Name	Dam Name	Included in NJDEP Listing
NJDEP	Clayton Borough	Silver Lake Dam	√
NJDEP	Clayton Borough	Wilson Lake Dam	√
NJDEP	Deptford Township	Almonesson Lake Dam	√
NJDEP	Deptford Township	Bankbridge Dam	√
NJDEP	Deptford Township	Westville-Almonesson Dam	√
NJDEP	East Greenwich Township	Hendrickson's Mill Dam	√
NJDEP	East Greenwich Township	Jessups Mill Road Dam #1	√
NJDEP	East Greenwich Township	Peaslee Dam	√
NJDEP	Elk Township	Lake Garrison Dam	√
NJDEP	Elk Township	Lake Gilman Dam	√
NJDEP	Elk Township	Lake Hackney Dam	√
NJDEP	Franklin Township	Cedar Lake Dam	√
NJDEP	Franklin Township	Franklinville Lake Dam	√
NJDEP	Franklin Township	Idle Acres Dam	√
NJDEP	Franklin Township	Iona Lake Dam	√
NJDEP	Franklin Township	Malaga Dam	√
NJDEP	Franklin Township	Village Dock Lake Dam	√
NJDEP	Glassboro Borough	Camelot Dam #1	√
NJDEP	Glassboro Borough	Camelot Dam #2	√
NJDEP	Glassboro Borough	Hidden Acres Dam	√
NJDEP	Glassboro Borough	Lake Oberst Dam	√
NJDEP	Glassboro Borough	Wadsworth Lake Dam	√
NJDEP	Harrison Township	Heritage Hunt Dam	√
NJDEP	Harrison Township	Hess Pond Dam	√
NJDEP	Harrison Township	Kincaid Lake Dam	√
NJDEP	Harrison Township	Mullica Hill Pond Dam	√
NJDEP	Logan Township	New Jersey No Name # 33 Dam	√
NJDEP	Monroe Township	Caines Mill Pond Dam	√
NJDEP	Monroe Township	Cranes Lake Dam	√
NJDEP	Monroe Township	Crystal Springs Dam	√
NJDEP	Monroe Township	Diamond Lake Dam	√
NJDEP	Monroe Township	Lower Victory Lakes #1 Dam	√
NJDEP	Monroe Township	Spruce Lake Dam	√
NJDEP	Monroe Township	Sunset Lake Dam	√
NJDEP	Monroe Township	Timber Lakes Dam	√
NJDEP	Monroe Township	Upper Victory Lake Dam	√
NJDEP	Mullica Township	Ewans Mill Dam	√
NJDEP	National Park Borough	New Jersey No Name # 3 dam	√
NJDEP	Pitman Borough	Alcyon Lake Dam	√
NJDEP	Pitman Borough	Glen Lake Dam	√
NJDEP	South Harrison Township	Harrisonville Dam	√
NJDEP	Swedesboro Borough	Narraticon Lake Dam	√
NJDEP	Washington Township	Bells Lake Dam	√
NJDEP	Washington Township	Bethel Lake Dam	√
NJDEP	Washington Township	County Farm Dam	√
NJDEP	Washington Township	Grenloch Lake Dam	√
NJDEP	Washington Township	Jones Lake Dam	√
NJDEP	Washington Township	Kandle Lake Dam	√
NJDEP	Washington Township	Lakeland Dam	√
NJDEP	Washington Township	Saddlebrook Dam	√

Included in HAZUS Listing	LAT/LONG Cord.
√	√
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NJDEP	Washington Township	Spring Lake Dam	√
NJDEP	Washington Township	Sterling Lake Dam	√
NJDEP	Washington Township	Ward Dam	√
NJDEP	Washington Township	Wedgewood Country Club Dam	√
NJDEP	Wenonah Borough	Wenonah Lake Dam	√
NJDEP	Woodbury City	Bell Lake Dam	√
NJDEP	Woodbury City	Woodbury Creek Dam	√
NJDEP	Woodbury Heights Borough	Glen Lake Dam	√
NJDEP	Woolwich Township	Kirschling Dam	√
NJDEP	Woolwich Township	Lake Basgalore Dam	√
NJDEP	Woolwich Township	Porches Mill Dam	√
NJDEP	Woolwich Township	Warrington Mill Dam	√
HAZUS	Clayton	Silver Lake Dam	√
HAZUS	Clayton	Wilson Lake Dam	√
HAZUS	Deptford	Almonesson Lake Dam	√
HAZUS	Deptford	Bankbridge Dam	√
HAZUS	East Greenwich	Warrington Mill Dam	√
HAZUS	Elk	Lake Garrison Dam	√
HAZUS	Elk	Wrights Mill Dam	
HAZUS	Franklin	Cedar Lake Dam	√
HAZUS	Franklin	Franklinville Lake Dam	√
HAZUS	Franklin	Iona Lake Dam	√
HAZUS	Franklin	Malaga Dam	√
HAZUS	Franklin	Village Dock Lake Dam	√
HAZUS	Glassboro	Wadsworth Lake Dam	√
HAZUS	Harrison	Kincaid Lake Dam	√
HAZUS	Harrison	Lake Gilman Dam	√
HAZUS	Harrison	Mullica Hill Pond Dam	√
HAZUS	Monroe	Caines Mill Pond Dam	√
HAZUS	Monroe	Cranes Lake Dam	√
HAZUS	Monroe	Diamond Lake Dam	√
HAZUS	Monroe	Sunset Lake Dam	√
HAZUS	Monroe	Timber Lakes Dam	√
HAZUS	Monroe	Upper Victory Lake Dam	√
HAZUS	Monroe	Victory Lakes #1 Dam	√
HAZUS	Pitman	Alcyon Lake Dam	√
HAZUS	South Harrison	Harrisonville Dam	√
HAZUS	Swedesboro	Narraticon Lake Dam	√
HAZUS	Washington	Bells Lake Dam	√
HAZUS	Washington	Bethel Lake Dam	√
HAZUS	Washington	Kandle Lake Dam	√
HAZUS	Washington	Sterling Lake Dam	√
HAZUS	Wenonah	Wenonah Lake Dam	√
HAZUS	Woodbury	Woodbury Creek Dam	√
HAZUS	Woolwich	Lake Basgalore Dam	√
HAZUS	Woolwich	Porches Mill Dam	√

Missing from NJDEP listing

√	√
√	√
√	√
	√
	√
√	√
√	√
√

Inventory of materials provided by SDVR POCs

Document	Description	County	Rec'd (date)	Sent to	date
Pittsgrove Tshp Mitigation Flood Info	Blue floder incl clippings, data on 2007 & 1940 floods	Salem	4/15		
Carney's Point materials	2 CDs of fotos + maps and photos of past events	Salem	4/15		
Carney's Point Stormwater Mgt Plan	Binder-clipped doc, ca. 100 pp.	Salem	4/15		
Quinton OEM	CD of fotos	Salem	4/15		
Heritage Building Gp. Stormwater Mgt Report (Carney's Pt)	Black-plastic bound doc, ca 150 pp.; Stormwater drainage site review	Salem	4/15		
Camden Co OEP	White-plastic bound doc, ca. 200 pp.	Camden	Ca. 4/1		
PDM Mitigation Grant Comm. Info.	Manila folder w/ local contacts, Wikipedia info	Salem	3/18		
Cumberland Co. X-Acc report	Black-plastic bound doc, ca 50 pp. (scanned 5/12)	Cumberland	3/18		
Cumberland Co. GIS	CD w/ GIS	Cumberland	2/19	VPA	Ca. 4/10
Salem Co. GIS	CD w/ GIC	Salem	3/18	VPA	Ca. 4/10
Camden DFIRMS, ortho	4 CDs	Camden	4/15		
Gloucester EOP	CD	Gloucester	3/18		
Salem EOP	CD	Salem	3/18		
Gloucester Co. X-acc report	CD	Gloucester	3/18		
Gloucester Co. NE Region strategic plan	CD	Gloucester	3/18		
"Cumberland OEM" (EOP)	CD	Cumberland	3/18		

Muni Stormwater Mgt Plan	CD	Gloucester	4/15		
LOIs (4 short)	Loose papers	Gloucester	4/15		
LOIs (all)	Loose papers	Salem	4/15		
LOIs (2 short)	Loose papers	Camden	5/20		
Compensation memo	Loose papers	Gloucester	4/15		
Kick-off materials	Loose papers	Cumberland	2/19		
Kick-off materials	Loose papers	Gloucester	2/19		
Kick-off materials	Loose papers	Salem	2/19		
ALL FILE COPIES OF PLANS (exc EOCs)	CD			VPA	5/14
Kick-off materials, invite template, LOI template, contacts	Loose papers (printed from .tif)	Camden	3/19		

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group/ Public Meeting Agenda
May 29, 2008

A. Welcome
B. Introductions
C. Municipal Participation and Eligibility
D. Hazard Mitigation Planning Overview
    1. What is hazard mitigation?
    2. Mitigation projects and activities
    3. Hazard Mitigation Plans
    4. The planning process
E. Where We are in the Process
    1. Plan Development
    2. Capability Assessment
    3. Public Involvement
F. Work in Progress
    1. Hazard identification and ranking
    2. Risk assessment methodology
    3. Risk assessment results to date
G. Next Steps

Presentation

H. Q&A
I. Discussion and Approval of Hazard Identification and Ranking
J. Prioritization of Critical Facilities
K. Validation of Preliminary Risk Assessment Outputs

Gloucester County, NJ Multi-Jurisdictional Hazard Mitigation Plan

Working Group/ Public Meeting May 29, 2008

PREPARED FOR:

Gloucester County

Dept. of Emergency Response

Agenda

- Introductions
- Municipal participation
- Hazard mitigation planning overview
- Where we are in the process
- Work in progress
- Next steps
- Questions and discussion

Introductions

Introductions

- County Working Group
- Special Districts and Organizations
- Other Stakeholders
- James Lee Witt Associates

Introductions

- Name
- Position
- Organization
- Previous Experience in Hazard Mitigation Planning or Implementation?

Municipal Participation

Municipal Participation: Eligibility Requirements

- Responding to data and document requests
- On-line Capability Assessment
- Completing Critical Facility inventories and prioritization
- Meeting attendance
- Plan adoption (at the end of the process)

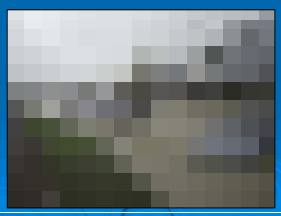
Municipal Participation: Eligibility Implications

- Pre-disaster hazard mitigation grant programs
- Post-disaster public assistance and hazard mitigation grant programs

Hazard Mitigation Planning Overview

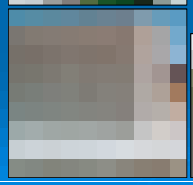
Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

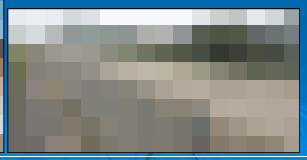
Any measures undertaken to reduce the risks posed by natural and/or manmade hazards on a place and its population.



Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

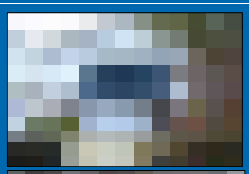
Hazard mitigation measures can include **structural projects** like levees, dams, or safe rooms.

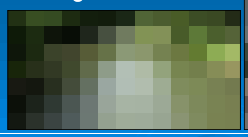


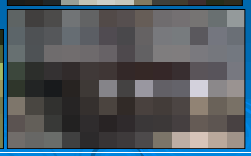


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

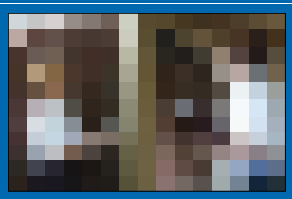
Also, **non-structural projects** like acquisition, elevation, retrofit of buildings, or vegetation management…





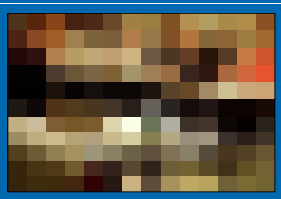


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…regulatory practices like enacting or enforcing building codes, permits, or land use policies…

Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…or training and educational programs for communities and local agencies.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Soft" mitigation projects include mitigation activities such as:

- building code enforcement
- land development regulations
- public education
- studies and plans
- etc.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Hard" mitigation projects or "property protection" construction activities:

- acquisition / elevation / mitigation reconstruction of structures
- retrofits for high wind loads such as installing hurricane shutters
- improving drainage
- etc.

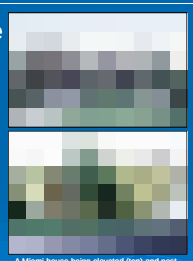
Hazard Mitigation Planning Overview: Acquisition

- Most cost-effective mitigation measure.
- Permanently removes vulnerable property.
- Structure: demolished or relocated; land: open space in perpetuity.
- Requires willing sellers and communities.

Source: Missouri Buyout Program 2002

Hazard Mitigation Planning Overview: Elevation

- Raising a structure above Base Flood Elevation.
- Building size, structural integrity, and type of foundation must be considered.
- Different types of elevation appropriate depending on the structure.



A Miami house being elevated (top) and post-elevation (bottom)
Source: FEMA, *Above the Flood*, 2000

Hazard Mitigation Planning Overview: Mitigation Reconstruction

- Pilot program funded under Disaster Declarations 1603 and 1607 (Hurricanes Katrina and Rita)
- If acquisition and elevation are not feasible then a structure may be demolished and reconstructed at the same location.

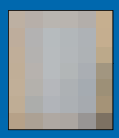
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

Potential projects for civic buildings, health care facilities, utilities, police stations, fire stations, EOCs, jails, schools:

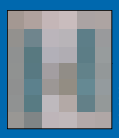
- Shutters/ impact resistant glass in windows
- Strengthen doors
- Hurricane straps/ clips to strengthen roof
- Bolt walls to foundation
- Bury utility lines underground
- Elevate the heating/ventilating/cooling equip.

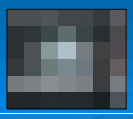
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

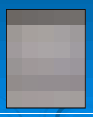
- Install shutters or impact resistant glass on windows


Accordion Shutters


Roll-Down Shutters


Colonial Shutters


Impact Resistant Glass


Corrugated Metal Panel

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Strengthen the doors.

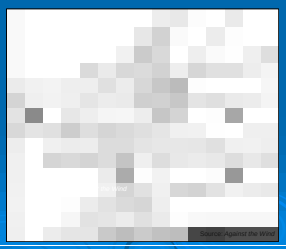

Source: Against the Wind

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Install hurricane straps and clips to strengthen roof.

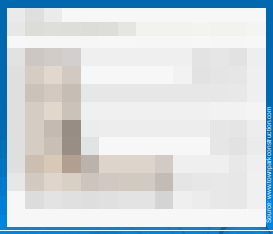

Source: Against the Wind


Source: The Advocate


Source: Against the Wind

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Bolt walls to foundation.


Source: www.homeadvisor.com

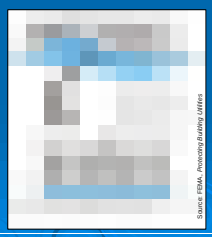
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Relocate utility lines underground.

Fallen utility lines after Wilma. Source: www.gaimie.com

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Elevate the heating, ventilating and cooling (HVAC) equipment, such as furnace and hot water heater.



Source: FEMA, Protecting Building Utilities

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

Potential Projects for pump stations, water control facilities, water treatment and delivery systems, power generation facilities, sewage collection and treatment facilities:

- Install backflow valves
- Elevate the generators and pumps
- Anchor fuel tanks
- Eliminate infiltration problems with underground utility systems

Hazard Mitigation Planning Overview: Drainage Improvements

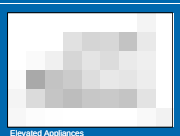
- Creating detention/ retention ponds and reservoirs
- Building floodwalls and diversions
- Constructing storm sewers and increasing culvert capacity
- Maintenance is not an eligible project

Detention Pond

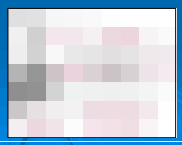
Culvert

Hazard Mitigation Planning Overview: Wet Floodproofing

- Modifying uninhabited portions of a structure to allow water in without significant damage
- Water-resistant materials
- Limited use: not practical for structures with living space at ground level, and does not mitigate high velocity floods



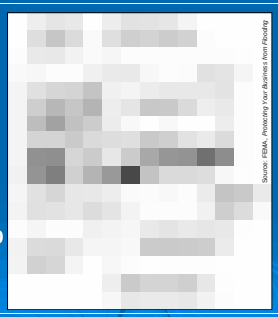
Elevated Appliances
source: www.louisianafloods.org



From www.louisianafloods.org

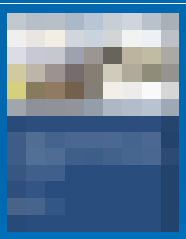
Hazard Mitigation Planning Overview: Dry Floodproofing

- Structure made watertight below vulnerable areas
- Walls sealed and openings waterproofed
- Useful vs. brief floods, <3 ft deep
- Ineffective vs. fast waters



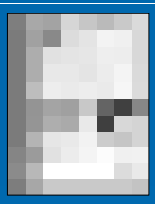
Source: FEMA, Protecting Your Business from Flooding

Hazard Mitigation Planning Overview: Community Shelters



- A structure built to withstand extreme winds and flying debris from tornadoes, hurricanes, and other storms that is accessible to the public.
- Guidelines can be found in FEMA 361.
- The shelter cannot be used for anything else.

Hazard Mitigation Planning Overview: Safe Rooms



- Built onsite or manufactured.
- In new or existing homes.
- Need adequate ventilation.
- Anchored to the foundation and structurally isolated from the main structure.
- First floor, basement, or outside.
- See FEMA Publication 320

Hazard Mitigation Planning Overview: 5% Initiative Mitigation Projects

Projects that are eligible for funding can include new, unproven mitigation techniques and technologies where benefits are not proven or not clearly measurable, such as:

- Generators; or
- Disaster warning equipment and systems.

Hazard Mitigation Planning Overview: What is a "Hazard Mitigation Plan"?

- **Hazard Mitigation Plan**:
  A plan to reduce a community's risk and exposure to disasters

  … which is different from an …

- **Emergency Operations Plan** (EOP):
  A plan to guide a community's response to an emergency or disaster

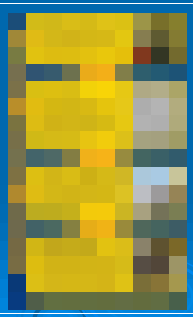
Hazard Mitigation Planning Overview: What is a "Hazard Mitigation Plan"?

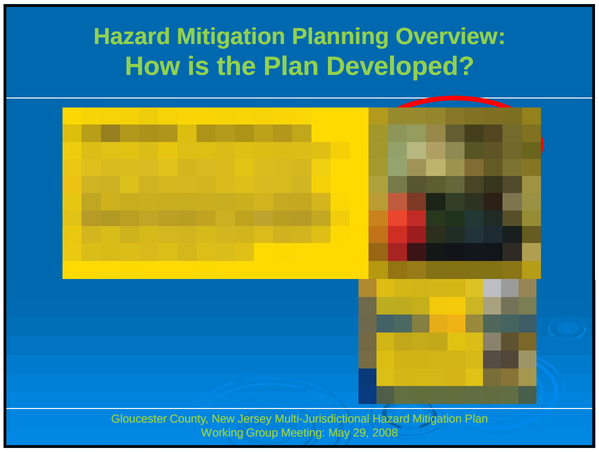
- A Hazard Mitigation Plan is typically written before hazard events occur (**pre-disaster**)
- Hazard mitigation projects can be implemented either before or after a disaster (**pre-disaster** or **post-disaster**).

Hazard Mitigation Planning Overview: How is the Plan Developed?

There is a lot of jargon that is used to describe the planning process.

This graphic shows the process recommended by FEMA.





Hazard Mitigation Planning Overview: How is the Plan Developed?

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group Meeting: May 29, 2008

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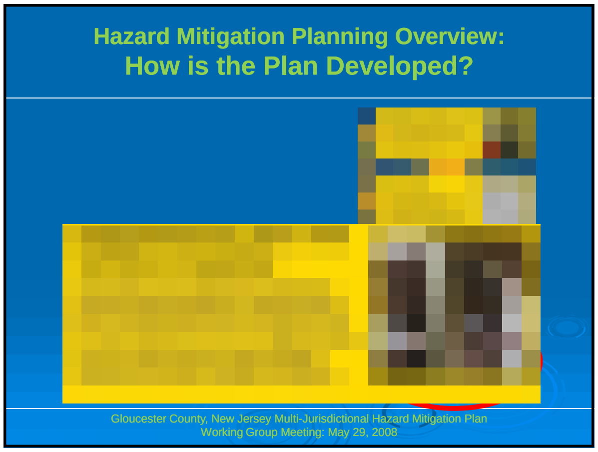
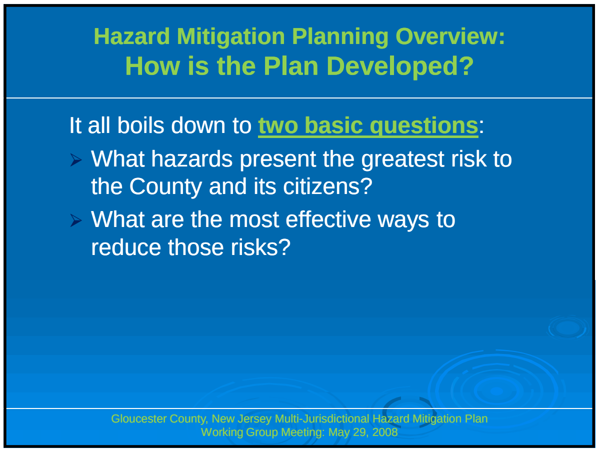
Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group Meeting: May 29, 2008



Hazard Mitigation Planning Overview: How is the Plan Developed?

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group Meeting: May 29, 2008



Hazard Mitigation Planning Overview: How is the Plan Developed?

It all boils down to two basic questions:

- What hazards present the greatest risk to the County and its citizens?
- What are the most effective ways to reduce those risks?

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
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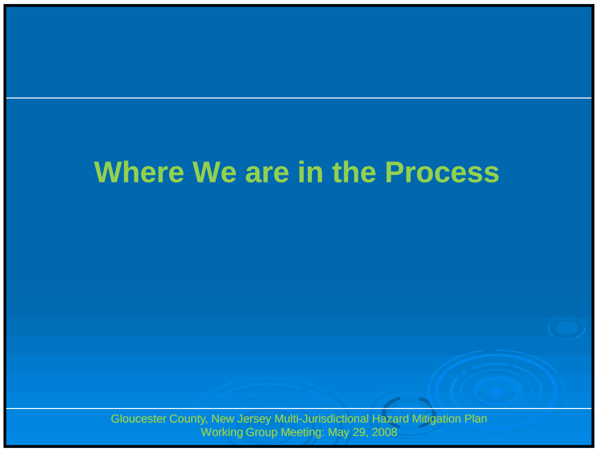

Where We are in the Process

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group Meeting: May 29, 2008

Where We are in the Process: Plan Development

Where We are in the Process: Plan Development

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Where We are in the Process: Plan Development

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Where We are in the Process: Public Involvement

- Press releases
- Public meetings
- Website postings: www.ccpublicsafety.org/hm/hm_home.htm
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Work in Progress

Work in Progress: Hazard Identification

Hazard Identification and Ranking

- Table 6.3-1 (Hazard Identification)
- Table 6.4-1 (Hazard Ranking)

These tables have been reviewed by the Steering Committee, but they need to be reviewed and validated by the Local Coordinators

Work in Progress: Hazard Identification

- Aircraft incidents
- Air pollution
- Civil disturbance
- Crime
- Dam failure
- Drought
- Earthquake
- Economic crisis
- Erosion
- Terrorism
- Extreme temp. (cold/heat)
- Flood
- Hail
- Hazmat (fixed/transport)
- High wind (hurricanes, etc.)
- High wind (tornado)
- Ice storm
- Landslide
- Levee failure
- Lightning
- Losses (crops/fishing)
- Pandemic disease
- Radiological incident
- Railroad incidents
- Storm surge
- Utility Failure
- Urban Fire
- Wildfire
- Winter weather

Work in Progress: Hazard Identification

- ~~Aircraft incidents~~
- ~~Air pollution~~
- ~~Civil disturbance~~
- ~~Crime~~
- Dam failure
- Drought
- Earthquake
- ~~Economic crisis~~
- Erosion
- ~~Terrorism~~
- Extreme temp. (cold/heat)
- Flood
- Hail
- Hazmat (fixed/transport)
- High wind (hurricanes, etc.)
- High wind (tornado)
- Ice storm
- Landslide
- Levee failure
- Lightning
- Losses (crops/fishing)
- ~~Pandemic disease~~
- ~~Radiological incident~~
- ~~Railroad incidents~~
- Storm surge
- ~~Utility Failure~~
- ~~Urban Fire~~
- Wildfire
- Winter weather

Work in Progress: Hazard Ranking

- ~~Aircraft incidents~~
- ~~Air pollution~~
- ~~Civil disturbance~~
- ~~Crime~~
- **Dam failure**
- ~~Drought~~
- **Earthquake**
- ~~Economic crisis~~
- ~~Erosion~~
- ~~Terrorism~~
- ~~Extreme temp. (cold/heat)~~
- **Flood**
- ~~Hail~~
- ~~Hazmat (fixed/transport)~~
- **High wind (hurricanes, etc.)**
- ~~High wind (tornado)~~
- ~~Ice storm~~
- ~~Landslide~~
- **Levee failure**
- ~~Lightning~~
- ~~Losses (crops/fishing)~~
- ~~Pandemic disease~~
- ~~Radiological incident~~
- ~~Railroad incidents~~
- ~~Storm surge~~
- ~~Utility Failure~~
- ~~Urban Fire~~
- ~~Wildfire~~
- **Winter weather**

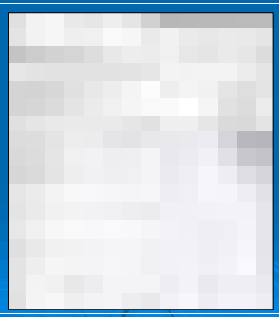
Work in Progress: Risk Assessment

The risk of **flood** is examined in several ways including:

- Exposure to predictable flood areas per FEMA FIRM maps

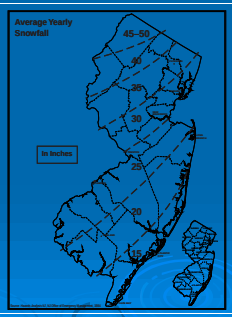
Work in Progress: Risk Assessment

- Repetitive loss properties per records of FEMA's National Flood Insurance Program.



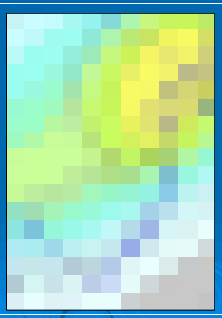
Work in Progress: Risk Assessment

Other natural hazards, like **winter storms**, are assessed in terms of exposure to events of predictable magnitudes



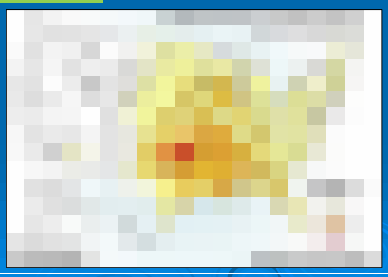
Work in Progress:
Risk Assessment

This approach is also used for **earthquakes**…



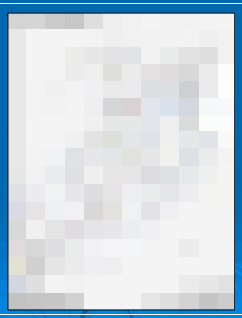
Work in Progress:
Risk Assessment

…and **high winds**



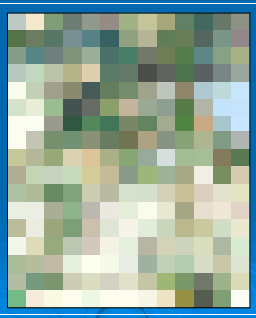
Work in Progress:
Risk Assessment

The risk of a manmade hazard like **dam failure** is assessed in terms of exposure of people and property



Work in Progress:
Risk Assessment

The risk of a technological hazard like **hazmat releases** is assessed in terms of exposure from fixed sites and transportation routes



Next Steps

Next Steps:
Complete Risk Assessment

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps:
Complete Risk Assessment

- Organize Resources
  - Build the Planning Team
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- Assess Risks
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Next Steps:
Complete Risk Assessment

- Complete the Risk Assessment
- Critical Facility prioritization and data acquisition

Next Steps:
Capability Assessment

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps:
Capability Assessment

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Where We are in the Process:
Capability Assessment

- Survey of municipal emergency managers
- Survey of other municipal officials with mitigation responsibilities or knowledge
- Survey of county emergency managers and other county officials
- Full assessment of federal, state, and local funding sources
- **All feeds directly into the mitigation strategies and actions**

Next Steps:
Mitigation Plan

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps: Mitigation Plan

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps: Mitigation Plan

- Draft Goals and Objectives
- Draft Mitigation Action Plan (by municipality)

Next Steps: Meetings

- Mitigation Goals, Objectives & Actions Review
  - Working Group Meeting: Mid-August
  - Public Meeting: Mid-August
- Plan Document Review
  - Working Group Meeting: Sept./Oct.
  - Public Meeting: Sept./Oct.

Next Steps: Staying in the Loop

- Watch the Hazard Mitigation Plan website: www.ccpublicsafety.org/hm/hm_home.htm
- Leave your email on the sign-up sheet
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Questions and Discussion

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Meeting Agenda
June 17, 2008

1. Housekeeping issues
   a) Meetings & scheduling (August schedules)

2. Old/ Ongoing Issues
   a) NJOEM/FEMA Issues (report from 6/13 meeting)
   b) Miscellaneous Documentation Issues (for FEMA)
      - Status of LOIs
      - Special Districts, Utilities, etc. Outreach documentation
      - Circulation of participation expectations and requirements
      - Each county coordinator is responsible for providing documentation supporting staff benefits calculations, as part of the match
      - May/June meeting announcements
      - BCC H. Cohen on all future official invite/outreach emails

3. The Plan Document
   a) Document handling/reviewing protocols
      - Protocol for incoming comments (from you to JLWA)
      - Protocol for tracked changes (from JLWA to you)
   b) Hazard Identification (HMP Section 6)
      - Note tables 6.3-1, 6.4-1
   c) Risk Assessment (HMP Section 7)
      - Document review, comments
      - Risk assessment municipality-by-municipality … surge, erosion, wildfire
   d) Capability Assessment (HMP Section 8)
      - Municipal surveys
      - County surveying
   e) Strategies (HMP Section 9)
      - Review goals, objectives
      - Discuss process for getting to actions
   f) Data requests and pursuits
      - Building permit mapping
      - RTK list/ hazmats
      - Levee data

- Dams

g) Critical Facilities

4. Review Action Items

5. Next Steering Committee Meeting: TBD

Meeting Notes
6/17/08
SDVR NJ multi-jurisdictional HMPs
Gloucester Co. OEM, 1200 N Delsea Dr., Clayton NJ

[Color-coded action items: County coordinators; JLWA]

IN ATTENDANCE:

- Sam Spino, Camden Co. OEM
- Len Clark, Gloucester Co. OEM
- Jim Manski, Cumberland Co. OEM
- Rick Westergaard, Gloucester Co. Plan Div.
- Greg Westfall, NRCS
- Hal Cohen, JLWA
- (Dave Polk, Salem Co. OEM, was briefed after the meeting)

Scheduling issues

The group determined that the August Steering Committee meeting would be rescheduled for Tues., Aug. 5 at 10am; the July Steering Committee meeting was cancelled

The group determined that the next round of county Working Group/ Public Meetings will be combined, and will happen as follows:

- 8/19 Camden
- 8/20 Gloucester
- 8/21 Cumberland
- TBD Salem

FEMA/NJOEM 6/13 seminar

Hal reported FEMA's stated goodwill – but reluctance to be pinned down – regarding the review period, and suggested that the county coordinators continue to press the issue

Hal related other things learned from FEMA RII, including re: municipal participation guidelines; and from NJOEM, incl. confirmation that our force-acct. documentation should work fine.

Misc and old/ongoing issues

Hal and the county coordinators discussed the status of various documentation issues:

- Only a handful of LOIs remain to be collected; Len advised that the remainder may not come in.

- In several cases, the following remain outstanding: documentation of expectations for participating municipalities; documentation of outreach to special districts, utilities, etc.; documentation supporting grant-matching calculations for staff benefits; documentation of public notice for May/June public meetings; May/June sign-ins.

Plan doc

Hal and the county coordinators reviewed the prelim. drafts of secs 6 & 7 of the plan.

Hal will re-upload the updates to Secs. 6 & 7 to the Sharepoint site (as of now, everyone got a copy of Cumberland)

Re: additional potential data sources: Hal will email Rick his fax number & Rick will supply some data/sources (see below); JLWA will see what is viable and available within a reasonable timeframe; otherwise, data will be noted and suggested for use in the next plan update):

For analysis of hazard and future growth:

- targeted growth areas per the Office of Smart Growth
- vacant lands analysis from Office of Smart Growth
- Patty Elkis @ DVRPC 215 592 1800
- Rick W's database of all new development
- well permits from DEP

For data on levees:

- Ken Strait at PSEG (Jim talked to him once, w/ no success)
- DEP waterfront development regulators
- Greg will see what else he can chase down

For hazmat:

- DEP "site remediation" webpage
- CDC ATSDR (agency for toxic substances and disease __)
- EPA "reading room" for risk mgt plans

Hal will be sure there is an appendix of data sources

Sam will re-upload his critical facilities lists to Sharepoint, esp. Runnemede and Gibbsboro

The county coordinators will fill in the missing dam lat/longs by the end of this week, if possible. Note that in the absence of true lat/longs, an "X" on a map would be good enough for our purposes

- The USACE also has a "dam database"

Jim clarified 2 changes to the CF list (Hal will make these changes):

- Deleted Deerfield dams are in upper Deerfield
- Deleted Fairfield hazmats are in a different (non-SDVR) county

Hal will add wildfire analysis to the list for Monroe and Franklin (Gloucester), Waterford and Winslow (Camden)

Hal made clear that true risk assessments (w/ monetized losses) for erosion and wildfire will be difficult without local input or studies; failing that we will do a more general hazard ID on the localities that identified these as particular concerns, and we will note in the strategies what additional data are needed to do true risk assessment

Hal updated re: county-level Capability Assessments and scheduled the last call (w/ Sam); following this, calls will be made to other county staff

Hal notes that drafts of the strategies section (9) and capability assessments (8) should be ready for 8/5 and 8/19-21

Hal explained that throughout July, JLWA staff would reach out one-to-one to the municipal OEM coordinators to:

- Complete critical facilities prioritization in cases where it is lacking to date
- Request (where appropriate) additional data/studies re: erosion, wildfire, or other hazards
- Discuss local hazard areas/concerns
- Elicit local input on mitigation strategies/actions

SDVR Materials Submission Tracking

As of June 15, 12:00pm

MUNICIPALITY	CRITICAL FACILITIES LIST			CAPABILITY ASSESSMENT SURVEY		
	Date in	Comments	Top sites Prioritized?	Date in	Additional respondents ID'd (survey Q#4a)	Additional respondents ID'd (survey Q#15a)
Camden Co. (37)						
Audubon Borough				4/29, 5/5 (same guy)	Planning, DPW, OEM, PD	--
Audubon Park Borough						
Barrington Borough	5/20	No new data provided; Didn't note priority sites		4/29	DPW, building dept., OEM, PD, FD/EMS	Planning, DPW, building dept., OEM, FD/EMS
Bellmawr Borough				4/29	DEP/Q, planning, DPW, building dept., OEM	DEP/Q, planning, DPW, building dept., OEM
Berlin Borough						
Berlin Township	5/20	No new data provided		5/14, 5/16	DPW, OEM	DPW, OEM, PD, FD
Brooklawn Borough	5/20	empty		5/19	--	--
Camden City						
Cherry Hill Township			Y			
Chesilhurst Borough						
Clementon Borough						
Collingswood Borough						
Gibbsboro Borough		*Hard-copy list doesn't match file copy*	Y	5/23	Boro engineer	Boro engineer
Gloucester City				4/29	Planning, DPW, building dept., OEM,	DEP/Q, planning, DPW,

MUNICIPALITY	CRITICAL FACILITIES LIST			CAPABILITY ASSESSMENT SURVEY		
	Date in	Comments	Top sites Prioritized?	Date in	Additional respondents ID'd (survey Q#4a)	Additional respondents ID'd (survey Q#15a)
					water/sewer	building dept., OEM
Gloucester Township						
Haddon Heights Borough						
Haddon Township	5/16	No new data provided; Didn't note priority sites				
Haddonfield Borough						
Hi-Nella Borough			Y			
Laurel Springs Borough				5/2	--	DPW, building dept., OEM
Lawnside Borough						
Lindenwold Borough			Y	5/12	--	--
Magnolia Borough	4/18			5/1	DPW, OEM, FD/EMS	DPW, OEM, FD/EMS
Merchantville Borough						
Mount Ephraim Borough						
Oaklyn Borough	5/20	No new data provided; Didn't note priority sites		5/16	--	--
Pennsauken Township	5/20	Didn't note priority sites		5/21	--	--
Pine Hill Borough	5/20			5/9	Building dept.	--
Pine Valley Borough	5/20			5/9		
Runnemede Borough		*Hard-copy list doesn't match file copy*	Y	4/29	Planning, DPW, building dept., OEM	Planning, DPW, building dept., OEM
Somerdale Borough	5/20	Didn't note priority sites	Y	5/10, 5/16	Municipal engineer	DEP/Q, planning, DPW, building dept., OEM
Stratford Borough			Y	4/29, 5/2	Borough engineer	--

MUNICIPALITY	CRITICAL FACILITIES LIST			CAPABILITY ASSESSMENT SURVEY		
	Date in	Comments	Top sites Prioritized?	Date in	Additional respondents ID'd (survey Q#4a)	Additional respondents ID'd (survey Q#15a)
Tavistock Borough	5/20	empty				
Voorhees Township						
Waterford Township				4/29	--	DPW, building dept., OEM
Winslow Township			Y	4/29	DPW, OEM, CCMUA	--
Woodlynne Borough						
Cumberland Co. (14)						
Bridgeton City				4/17	--	--
Commercial Township			Y			
Deerfield Township	6/11		Y	4/17	--	--
Downe Township	6/11		Y	4/17	--	--
Fairfield Township	6/12		Y	4/17	--	DEP/Q, DPW, OEM
Greenwich Township	6/12		Y	4/8	--	--
Hopewell Township						
Lawrence Township				5/13	--	Planning, DPW, OEM
Maurice River Township				4/17	--	Planning, DPW, building dept., OEM
Millville City				4/17	--	--
Shiloh Borough				4/17	--	DEP/Q, OEM
Stow Creek Township				5/27	--	--
Upper Deerfield Township				4/17	DPW	--
Vineland City				4/17	Planning, DPW	--
Gloucester Co. (24+1)						
Clayton Borough	4/29		Y			
Deptford Township	5/14		Y	4/8		
East Greenwich Township			Y	4/8	DPW, building dept.	DPW, building dept.

MUNICIPALITY	CRITICAL FACILITIES LIST			CAPABILITY ASSESSMENT SURVEY		
	Date in	Comments	Top sites Prioritized?	Date in	Additional respondents ID'd (survey Q#4a)	Additional respondents ID'd (survey Q#15a)
Elk Township	4/17		Y	4/9 (+inc 4/9)	--	--
Franklin Township	4/17			4/8	Planning, DPW, building dept.	Planning, DPW, building dept.
Glassboro Borough	4/17					
Greenwich Township	4/17		Y	4/17	DPW, OEM	DPW, building dept., OEM
Harrison Township	4/17		Y	4/9	--	Building dept., OEM, contracted engineering ofc.
Logan Township						
Mantua Township	4/17			4/9	Planning, DPW, OEM	Planning, DPW, building dept., OEM
Monroe Township			Y	4/8	--	--
National Park Borough				4/10	DPW, FD/EMS	DPW, FD/EMS
Newfield Borough				5/7	DPW, OEM	OEM
Paulsboro Borough	5/30		Y	4/13	--	--
Pitman Borough	4/28		Y	4/11	--	--
Rowan University	*4/17*			--		
South Harrison Township	5/30		Y	4/14	--	--
Swedesboro Borough	4/29		Y	4/11	DPW	DPW, OEM
Washington Township			Y	4/8	--	DEP/Q, planning, DPW, building dept., OEM, municipal engineer
Wenonah Borough			Y	4/8	--	--
West Deptford Township	4/29	Didn't note priority sites	Y	4/9	DPW, PD	--
Westville Borough	5/5			4/16	--	OEM
Woodbury City	4/29		Y	4/9	DPW, OEM, FD	DPW, OEM

MUNICIPALITY	CRITICAL FACILITIES LIST			CAPABILITY ASSESSMENT SURVEY		
	Date in	Comments	Top sites Prioritized?	Date in	Additional respondents ID'd (survey Q#4a)	Additional respondents ID'd (survey Q#15a)
Woodbury Heights Borough				4/27	DPW, building dept., OEM	DPW, building dept., OEM
Woolwich Township	4/28		Y	5/9	--	DPW, OEM
Salem Co. (15)						
Alloway Township	5/28	Paper copy only; didn't note priority sites				
Carneys Point Township	5/28	Paper copy only		6/4	--	--
Elmer Borough						
Elsinboro Township				6/4	--	DPW, OEM
Lower Alloways Creek Township				6/4	--	DPW, OEM
Mannington Township						
Oldmans Township						
Penns Grove Borough						
Pennsville Township						
Pilesgrove Township						
Pittsgrove Township	5/28	Paper copy only		6/4	--	--
Quinton Township						
Salem City						
Upper Pittsgrove Township						
Woodstown Borough						

New Jersey Multi-Jurisdictional Hazard Mitigation Plans:
Hazards to be Risk-Assessed
June 17, 2008

	Flood*	Winter Weather	Earthquake	Dam failure*	Levee failure*	Erosion	Storm surge	Wildfire
Camden Co. (37)	X	X	X	X				
Audubon Borough	X	X	X	X				
Audubon Park Borough	X	X	X	X				
Barrington Borough	X	X	X	X				
Bellmawr Borough	X	X	X	X				
Berlin Borough	X	X	X	X				
Berlin Township	X	X	X	X				
Brooklawn Borough	X	X	X	X				
Camden City	X	X	X	X				
Cherry Hill Township	X	X	X	X				
Chesilhurst Borough	X	X	X	X				
Clementon Borough	X	X	X	X				
Collingswood Borough	X	X	X	X				
Gibbsboro Borough	X	X	X	X				
Gloucester City	X	X	X	X				
Gloucester Township	X	X	X	X				
Haddon Heights Borough	X	X	X	X				
Haddon Township	X	X	X	X				
Haddonfield Borough	X	X	X	X				
Hi-Nella Borough	X	X	X	X				
Laurel Springs Borough	X	X	X	X				
Lawnside Borough	X	X	X	X				
Lindenwold Borough	X	X	X	X				
Magnolia Borough	X	X	X	X				
Merchantville Borough	X	X	X	X				
Mount Ephraim Borough	X	X	X	X				
Oaklyn Borough	X	X	X	X				
Pennsauken Township	X	X	X	X				
Pine Hill Borough	X	X	X	X				

	Flood*	Winter Weather	Earthquake	Dam failure*	Levee failure*	Erosion	Storm surge	Wildfire
Pine Valley Borough	X	X	X	X				
Runnemede Borough	X	X	X	X				
Somerdale Borough	X	X	X	X				
Stratford Borough	X	X	X	X				
Tavistock Borough	X	X	X	X				
Voorhees Township	X	X	X	X				
Waterford Township	X	X	X	X				
Winslow Township	X	X	X	X				
Woodlynne Borough	X	X	X	X				
Cumberland Co. (14)	X	X	X	X	X			
Bridgeton City	X	X	X	X	X			
Commercial Township	X	X	X	X	X	X	X	X
Deerfield Township	X	X	X	X	X			
Downe Township	X	X	X	X	X	X	X	
Fairfield Township	X	X	X	X	X	X	X	
Greenwich Township	X	X	X	X	X	X	X	
Hopewell Township	X	X	X	X	X			
Lawrence Township	X	X	X	X	X	X	X	X
Maurice River Township	X	X	X	X	X	X	X	X
Millville City	X	X	X	X	X			X
Shiloh Borough	X	X	X	X	X			
Stow Creek Township	X	X	X	X	X			
Upper Deerfield Township	X	X	X	X	X			
Vineland City	X	X	X	X	X			
Gloucester Co. (24)	X	X	X	X	X			
Clayton Borough	X	X	X	X	X			
Deptford Township	X	X	X	X	X			
East Greenwich Township	X	X	X	X	X			
Elk Township	X	X	X	X	X			

New Jersey Multi-Jurisdictional Hazard Mitigation Plans:
Hazards to be Risk-Assessed
June 17, 2008

	Flood*	Winter Weather	Earthquake	Dam failure*	Levee failure*	Erosion	Storm surge	Wildfire
Franklin Township	X	X	X	X	X			
Glassboro Borough	X	X	X	X	X			
Greenwich Township	X	X	X	X	X			
Harrison Township	X	X	X	X	X			
Logan Township	X	X	X	X	X			
Mantua Township	X	X	X	X	X			
Monroe Township	X	X	X	X	X			
National Park Borough	X	X	X	X	X			
Newfield Borough	X	X	X	X	X			
Paulsboro Borough	X	X	X	X	X			
Pitman Borough	X	X	X	X	X			
South Harrison Township	X	X	X	X	X			
Swedesboro Borough	X	X	X	X	X			
Washington Township	X	X	X	X	X			
Wenonah Borough	X	X	X	X	X			
West Deptford Township	X	X	X	X	X			
Westville Borough	X	X	X	X	X			
Woodbury City	X	X	X	X	X			
Woodbury Heights Borough	X	X	X	X	X			
Woolwich Township	X	X	X	X	X			
Salem Co. (15)	X	X	X	X	X			
Alloway Township	X	X	X	X	X			X
Carneys Point Township	X	X	X	X	X	X	X	
Elmer Borough	X	X	X	X	X			
Elsinboro Township	X	X	X	X	X	X	X	
Lower Alloways Creek Township	X	X	X	X	X	X	X	
Mannington Township	X	X	X	X	X			

New Jersey Multi-Jurisdictional Hazard Mitigation Plans:
Hazards to be Risk-Assessed
June 17, 2008

	Flood*	**Winter Weather**	**Earthquake**	**Dam failure***	**Levee failure***	**Erosion**	**Storm surge**	**Wildfire**
Oldmans Township	X	X	X	X	X			
Penns Grove Borough	X	X	X	X	X	X	X	X
Pennsville Township	X	X	X	X	X	X	X	
Pilesgrove Township	X	X	X	X	X			
Pittsgrove Township	X	X	X	X	X			X
Quinton Township	X	X	X	X	X		X	
Salem City	X	X	X	X	X		X	
Upper Pittsgrove Township	X	X	X	X	X			
Woodstown Borough	X	X	X	X	X			

[SDVR] County NJ Multi-Jurisdictional Hazard Mitigation Plan
Goals and Objectives Outline – June 17, 2008

The following is an initial attempt to develop goals, objectives and action items for the Southern Delaware Valley Region counties' Multi-Jurisdictional Hazard Mitigation Plans. For the purposes of these Plans, the following definitions are proposed:

- Goals are general guidelines that explain what the County and participating communities want to achieve. Goals are expressed as broad policy statements representing desired long-term results.
- Objectives (a/k/a Strategies) describe the broad means to attain an identified Goal. Objectives are more specific statements than goals; the strategies are usually measurable and can have a defined completion date.
- Action Items are the specific steps (projects, policies, and programs) that advance a given Objective. They are highly focused, specific and measurable.

Based on the work-in-progress for the risk and capability assessments for the Southern Delaware Valley Region counties, the following outline is recommended for consideration as goals and objectives that will lead to the identification of specific action items:

Goal I:	Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact
	▪ Objective I.A: Increase awareness of risks and understanding of the advantages of mitigation by the general public and by local government officials ▪ Objective I.B: Increase local government official awareness regarding funding opportunities for mitigation

Goal II:	Improve data collection, use and sharing to reduce the impacts of hazards
	▪ Objective II.A: Improve data available to the County and participating communities for use in future planning efforts ▪ Objective II.B: Provide government officials and local practitioners with educational opportunities and information regarding best practices for hazard mitigation planning, project identification and implementation

Goal III:	Improve capabilities, coordination and opportunities at municipal and county levels for planning and implementing hazard mitigation projects, programs and activities
	▪ Objective III.A: Continue support of hazard mitigation planning, project identification and implementation at the municipal and County level ▪ Objective III.B: Support increased NFIP / CRS participation ▪ Objective III.C: Support increased integration of municipal/county hazard mitigation planning and floodplain management with effective municipal/county zoning regulation, subdivision regulation, and comprehensive planning ▪ Objective III.D: Elicit and support efforts by federal and state legislatures and agencies to address shortcomings in existing laws, programs and administrative rules related to hazard mitigation

Goal IV:	Mitigate repetitive and severe repetitive loss properties and implement other hazard mitigation projects, programs and activities by identifying cost-effective, environmentally sound and technically feasible projects.
	▪ Objective IV.A: 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 ▪ Objective IV.B: Maintain and enhance local regulatory standards including full and effective building code enforcement, floodplain management, and other vulnerability-reducing regulations.

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Meeting Agenda
August 5, 2008

1. Housekeeping issues
   a. Meetings & scheduling (August meeting schedules; September meetings)
   b. SharePoint issues?
   c. Miscellaneous Documentation Issues (for FEMA)
      - Status of LOIs
      - Special Districts, Utilities, etc. outreach documentation
      - Circulation of participation expectations and requirements
      - Each county coordinator is responsible for providing documentation supporting staff benefits calculations, as part of the match
      - May/June meeting announcements
      - August meeting announcements
      - September meeting announcements
      - Status of force-accounting?
      - As always, pls. BCC H. Cohen on all future official invite/outreach emails

2. The Plan Document
   a. Timeline for reviews
      - See review timeline
      - Next (and final) working group/ public meetings: need to schedule for weeks of 9/22-26 or 9/29-10/3
      - Post draft plan to your website (i.e., to the public) as of 9/9
      - Need to give notice to neighboring counties of draft availability as well
   b. Reminder of document handling/reviewing protocols
      - Protocol for incoming comments (from municipal coordinators, etc. to you)
      - Protocol for incoming comments (from you to JLWA)
      - Note new SharePoint folders
      - Protocol for tracked changes (from JLWA to you)
   c. TOC, Summary, Context, Adoption (HMP Sections 1-4)
      - Discuss gaps
      - Comments?
   d. Planning Process (HMP Section 5)
      - Discuss gaps
      - Need to start developing public outreach during planning: speaker's bureau, CERT booth info, briefing points for local coordinators, etc.

- Comments?

e. Hazard Identification (HMP Section 6)
   - Revised format for Table 6.4-1 per FEMA RII preference
   - Hazmats
   - Comments?

f. Risk Assessment (HMP Section 7)
   - Dams
   - Levees
   - Surge
   - Erosion
   - Wildfire
   - Future development
   - Comments?

g. Capability Assessment (HMP Section 8)
   - Review Gloucester draft
   - Discuss gaps
   - Comments?

h. Strategies (HMP Section 9)
   - Review Section 9 work-in-progress materials
   - municipal actions list
   - Call logs and non-responsive communities
   - Note re: next steps on municipal actions
   - Comments?

i. Plan Maintenance (HMP Section 10)
   - Discuss gaps
   - Comments?

3. Review Action Items

4. Next Steering Committee Meeting: 9/16 10 am
   a. Full draft document review
   b. “Activities”

Meeting Notes
8/5/08
SDVR NJ multi-jurisdictional HMPs
Gloucester Co. OEM, 1200 N Delsea Dr., Clayton NJ

[Color-coded action items: County coordinators; JLWA]

IN ATTENDANCE:

- Sam Spino, Camden Co. OEM
- Len Clark, Gloucester Co. OEM
- Jim Manski, Cumberland Co. OEM
- Rick Westergaard, Gloucester Co. Plan Div.
- Hal Cohen, JLWA
- Pat Spring, Salem Co. OEM

Scheduling issues

The group determined that the September Steering Committee meeting would be rescheduled for Fri., Sept. 19 at 10am. Len will send out a meeting invite re: the new date

The next round of county Working Group/ Public Meetings will be combined, and will happen as follows:

- 8/19 Camden, Gloucester (2 separate meetings)
- 8/21 Cumberland, Salem (potentially combined across jurisdiction – Salem and Cumberland will let Hal know ASAP whether they intend to consolidate their meetings.)

The final round of county Working Group/ Public Meetings will take place during the weeks of 9/22-26 or 9/29-10/3. The county coordinators will determine the schedule for these in the near future.

Misc and old/ongoing issues

Hal and the county coordinators discussed the status of various documentation issues:

- LOIs still need to be submitted from ***Cumberland***
- Documentation of outreach to school districts, utilities, etc. (letters and address lists, email text and address lists, etc.) need to be provided for ***Salem***, ***Camden, Gloucester*** & ***Cumberland***
- Documentation that municipal participation requirements were communicated (e.g., emails, correspondence, meeting agenda/minutes) still needed from ***Camden*** & ***Cumberland***
- Documentation supporting staff benefits (for the match) are still needed from ***Salem***, ***Camden*** & ***Cumberland***
- Documentation demonstrating public notice for the May/June public meetings is still needed from ***Cumberland***

- Documentation demonstrating public notice for the August public meetings is still needed from ***Cumberland***, ***Gloucester*** & ***Salem***
- ***Additionally*** – I do not have the meeting sign-in for the May/June meetings from ***Camden***

Plan doc timeline & reviews

Hal and the county coordinators covered various issues:

- Hal reviewed the document production and review timeline, including that the county coordinators will have from 9/9 through 9/19 to make comments.
- The plans should be posted to SDVR website for public review on 9/9
- County coordinators will be responsible for accumulating comments from the public, municipal coordinators, etc.
- County coordinators should make any changes they want to the documents as "tracked changes" or in comment boxes in the word documents themselves, then place them on the sharepoint site in the folders set up for this purpose in each of your county folders
- Hal will look into what exactly is needed by way of giving notice to neighboring counties and other "interested" state/fed agencies
- Hal will resend the sharepoint log-in and PW as an email (for your reference, it is still ID = "sdelawareuser"; PW = "delaware287")

The plan document

Secs. 1-4 and 10 will be available on 9/9; any gaps that need to be filled in by the county coordinators will be clearly identified

- Hal will check how deep "in the weeds" we need to get as we list parties who will submit, approve, and maintain these plans (this is in regard to whether we need to list out all municipalities and other potential adopters of the plan).

Sec. 5 (Planning Process will also be available on 9/9

- The county coordinators will want to document ***ongoing*** public outreach efforts, whatever those may be. (e.g., hand-outs for CERT booths, public library tables, etc.; burning CDs of the intro .ppt for use by the municipal coordinators; presentations you have made or intend to make to municipalities, school boards, the Elks, Rotary, etc., etc.)

Updates to Secs. 6 & 7 were reviewed, including:

- Review and approval of the revised format for table 6.4-1
- discussion and approval of the treatment of hazmats and the analysis of future development

An example of Sec. 8 (Capability Assessment) was distributed and discussed; additional draft plans will be made available as they are completed

Sec. 9 was discussed, including:

- Distribution of municipally-generated action items, thus far
- The county coordinators will review the action items generated by our team in cooperation with the municipal coordinators to be sure that there are no actions proposed for the County which the County has objections to
- Hal will check whether there is any need to take fotos of private homes identified for mitigation actions by the municipalities
- Hal will send Dave Polk a list of critical facilities ID'd by the municipal coordinators that need to be foto'd
- Hal will send everyone another copy of the instructions for taking foto of critical facilities

Misc.

- Hal has corresponded with Jim already re: the seal used in the Cumberland documents.

Memorandum

From: Hal Cohen, JLWA
To: SDVR NJ counties
Date: July 31, 2008
Re: 8/5 Hazard Mitigation Plan steering committee meeting

All –

In preparation for the upcoming Hazard Mitigation Plan steering committee meeting on Tues., Aug. 5, please find in this packet the following, for your review:

Documents related to ongoing plan document development:

- An updated draft of Section 6 (Hazard ID)
- An updated draft of Section 7 (Risk Assessments)
- Some of you will also find a file with an appendix table showing hazmat releases – if you don't have this as a separate appendix, this means your county's list was short enough to fit into the main text
- A draft of Section 8 (Capability Assessment) for Gloucester Co. (this is provided to all of you as an example; the rest of the counties are being drafted this week and next.)

Documents related specifically to the development of mitigation actions (i.e., Section 9) … all current as of today's date:

- Our worksheet of all the municipally-ID'd mitigation actions for your county
- A call log showing our municipal outreach work
- A list of critical facilities and other structures ID'd through the municipal outreach as needing to be photographed

from the desk of:

Hal Cohen, Planner
James Lee Witt Assoc.
(ph) 202.560.9750
(fx) 202.588.8085
hcohen@wittassociates.com

Requirement §201.6(c)(2)(ii)(C): [The plan ***should*** *describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

This subsection of the Camden County HMP identifies areas in the County that may have potential for development, particularly in floodplains. There is presently no GIS or database with zoning or comprehensive planning information, so the planning team determined that areas of potential development could be identified by compiling spatial data from several Statewide planning-related documents, then using a GIS-based process to remove areas that are either already developed, or are unlikely to be developed because of land use restrictions, especially Statewide policies.

The main sources of data for this process were the New Jersey State Development and Redevelopment Plan (NJDRP), the New Jersey Department of Environmental Protection, and the New Jersey Office of Smart Growth. The planning team secured GIS-based data sets from each of these sources, with the purpose of identifying areas that are appropriate and inappropriate for development, according to various land planning and environmental protection standards.

The NJDRP establishes five *Planning Areas* that are used to apply Statewide policies to both natural and built resources. In order to ensure consistency with Statewide land planning designations (and because there is presently no Statewide land use or zoning database), the (XXXXX) determined that these Planning Areas should be used as a general basis for describing existing land uses and identifying areas with potential for development.

Comment [MSOffice1]: What's the name of the planning team, HWGC or something like that – insert here.

There are five Planning Area designations. These five Planning Areas are large masses of land (more than one square mile in extent) that share a common set of conditions such as population density, infrastructure systems, level of development or natural systems. The Planning Areas reflect distinct geographic and economic units within the State and serve as an organizing framework for application of the Statewide Policies of the State Plan.

- Metropolitan Planning Area (Planning Area 1) Provides for much of the State's future redevelopment. Revitalize cities and towns; promote growth in compact forms; stabilize older suburbs; redesign areas of sprawl; and protect the character of existing stable communities.
- Suburban Planning Area (Planning Area 2) Provides for much of the state's future development. Promote growth in Centers and other compact forms; protect the character of existing stable communities; protect natural resources; redesign areas of sprawl; reverse the current trend toward further sprawl; and revitalize cities and towns.
- Fringe Planning Area (Planning Area 3) Accommodate growth in Centers; protect the Environs primarily as open lands; revitalize cities and towns; protect the character of existing stable communities; protect natural resources; provide a buffer between more developed Metropolitan and Suburban Planning Areas and less developed Rural and Environmentally Sensitive Planning Areas; and confine programmed sewers and public water services to Centers.
- Rural Planning Area and Rural/Environmentally Sensitive Planning Area (Planning Area 4) Maintain the environs as large contiguous areas of farmland and other lands; revitalize cities and towns; accommodate growth in Centers; promote a viable agricultural industry; protect the character of existing stable communities; and confine programmed sewers and public water services to Centers.
- Environmentally Sensitive Planning Area and Environmentally Sensitive/Barrier Islands Planning Area (Planning Area 5) Protect environmental resources through the protection of large contiguous areas of land; accommodate growth in Centers; protect the character of existing stable

communities; confine programmed sewers and public water services to Centers; and revitalize cities and towns.

Source: 2001 State Development and Redevelopment Plan

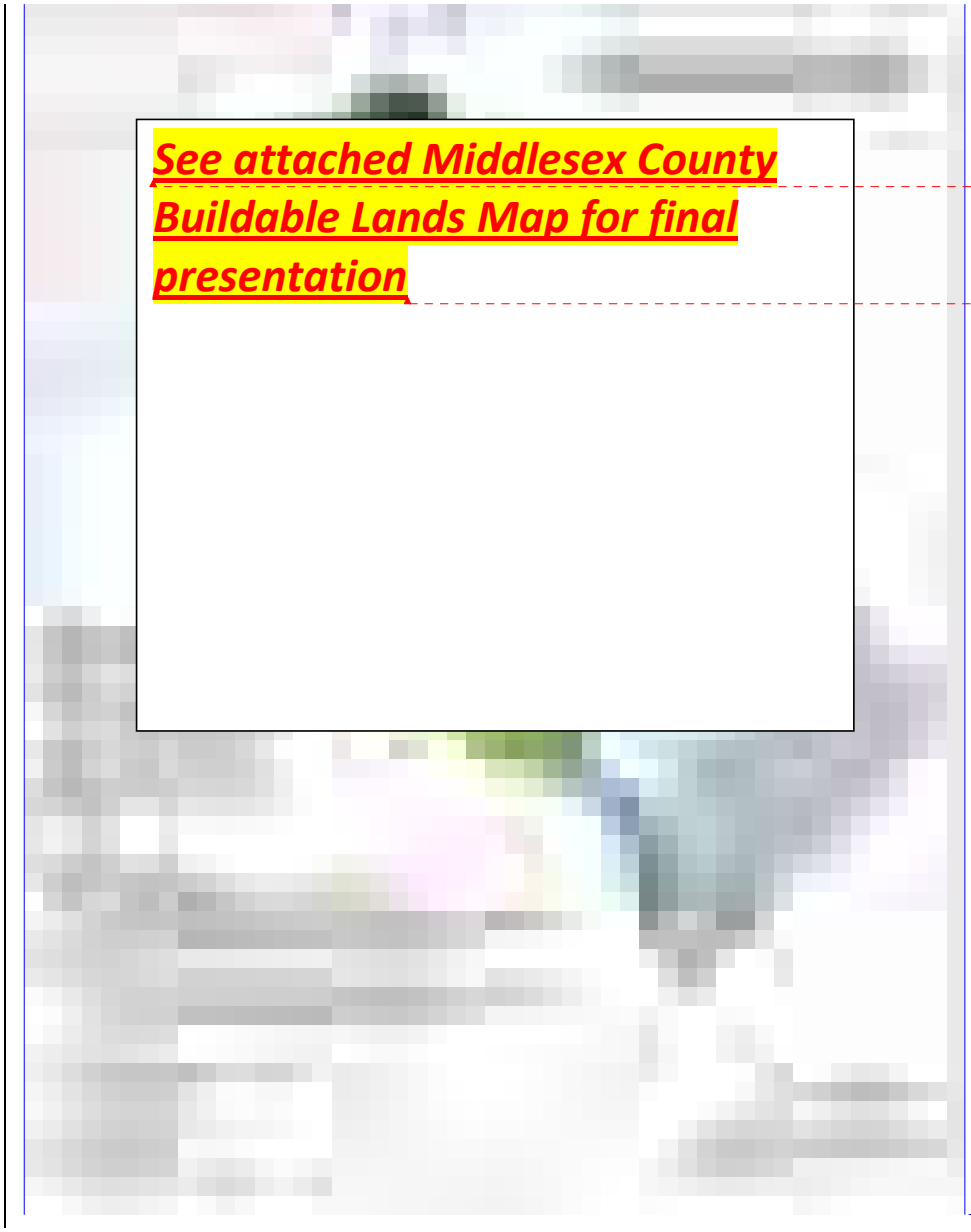
The State Development and Redevelopment Plan (NJDRP) indicates that Planning Area designations 1 and 2 are most appropriate for development, although in some limited circumstances the other areas may also be considered appropriate. This section of the County hazard mitigation plan does not include a detailed discussion of the criteria used in the NJDRP, but planners and local officials can review the latter plan on the web at (XXXX)

Comment [MSOffice2]: Insert link if available – if not, just edit last sentence as needed.

Comment [MSOffice3]: You lost me here. Are these overlapping state designations, or are these things we have come up with for this analysis? Also, in the top graf here, you refer to "level" 1-3 – is this the same as "planning area" 1-3?

Figure 6.X highlights in dark pink buildable land areas for Camden County. Also identified on the map are the five Planning Areas from the State Plan, Smart Growth areas, and the FEMA flood zones.

Figure 6.X.X
Camden County Future Growth Locations
(Sources: 2001 New Jersey State Development and Redevelopment Plan, FEMA, NJDEP)



Comment [MSOffice4]: Couple (cartographic) comments on the map:
1) b/c the flood zones and the planning areas are both rendered as opaque colors, it is not possible to discern where they overlap (which is the crux of this analysis). This is shown in the tabular data below, but you can't see it in the map. Perhaps the floodzones could be rendered in cross-hatch?
2) The way "smart growth areas" are rendered, in combination with the 5 planning areas, is confusing to me … am I understanding correctly that 1/3 of the county is not in a planning area at all? (Maybe this is pinelands? If so, we need that in the map.) I'd surmise that maybe ONLY smart growth areas are delineated with planning areas, but it looks like a bunch of the SE corner of the county is a smart growth area w/o a planning area designation.
3) The legend for smart growth areas might be clearer if it read "area within smart growth area" and "area outside of smart growth area," rather than just Yes or No.
4) I don't understand, based on the text above and below this, why there would be no pink in the SE corner of the state; if it's not env. sensitive etc., shouldn't some of it be listed shown as "buildable?" or does "buildable" only include open land w/in SG areas? (even if that's the case, it looks like there is land in the SE corner that should likely be pink?)

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The map shows that the buildable land areas remaining in Camden County are largely located within the Metropolitan and Suburban Planning Areas, with a small portion located within the Fringe Planning Area. Almost all of the available buildable land area is located outside of the 100-year (flood zones A and AE) and 500-year floodplain (flood zone X500). Table 6.X below summarizes the acres of buildable land area that are located either inside or outside of the FEMA flood zones for the three planning areas included on the Future Growth Locations map.

Table 6.X.X
Camden County Planning Areas: Buildable Land (in Acres)
(Sources: 2001 New Jersey State Development and Redevelopment Plan, FEMA, NJDEP)

Comment [MSOffice5]: As you read the FEMA requirement at the top of this, should "vulnerability" include a potential dollar-value exposure figure? I think we have the data to do this, at least for housing, but I'm not sure it's necessary.

Plan Area Description	Smart Growth	Zone Description	Total (Acres)
Fringe Planning Area	No	Area not included	20.33
	No	Areas outside the 500 year flood zone.	1.69
	Fringe Planning Area Total		**22.03**
Metropolitan Planning Area	Yes	Area not included	59.18
	Yes	Areas outside the 500 year flood zone.	8,245.96
	Yes	Areas within the 100 year flood zone for which base flood elevations have been determined	708.81
	Yes	Areas within the 100 year flood zone for which no base flood elevations have been determined	169.14
	Yes	Areas within the 500 year flood zone.	259.23
	Metropolitan Planning Area Total		**9,442.32**
Suburban Planning Area	Yes	Areas outside the 500 year flood zone.	930.29
	Yes	Areas within the 100 year flood zone for which base flood elevations have been determined	21.54
	Yes	Areas within the 100 year flood zone for which no base flood elevations have been determined	0.36
	Yes	Areas within the 500 year flood zone.	1.78
	Suburban Planning Area Total		**953.97**
Grand Total			**10,418.32**

The following table identifies the acres of buildable land areas in Camden County broken down by municipality. The data is ordered by the total number of buildable acres and is broken out by FEMA flood zones (See Future Growth map above or Section 6.3.7 for a description of the flood zone designations). The table shows that the largest area of buildable land is located in Gloucester Township.

Table 6.X.X
Camden County Buildable Land (in acres) by Flood Zone, Ranked by Municipality
(Sources: 2001 New Jersey State Development and Redevelopment Plan, FEMA, NJDEP)

Municipality Name	A	AE	ANI	X500	X	Grand Total
Gloucester Township	54.46	198.46	0	28.37	3,531.53	3,812.82
Cherry Hill	8.70	94.51	0	88.06	1,326.64	1,517.90

Vorhees	0	27.01	0	15.20	1,006.99	1,049.21
Pennsauken	10.08	140.28	0	35.19	446.49	632.04
Gibbsboro	1.47	1.64	0	0.82	418.40	422.33
Lindenwold	0.07	20.21	0	7.18	371.39	398.86
Pine Hill	0.08	0.27	0	0.08	323.70	324.12
Lawnside	4.20	4.51	0.00	9.86	268.26	286.84
Camden	0	95.76	0	26.54	127.40	249.69
Bellmawr	25.00	19.23	0.01	3.28	152.45	199.96
Runnemede	20.40	15.18	0	4.14	128.65	168.36
Clementon	4.40	0.43	0	0.01	157.43	162.27
Berlin Township	0.28	0	0	0	155.10	155.38
Berlin Borough	0	0	0	0	144.99	144.99
Barrington	0.79	0	0	0	112.63	113.42
Haddonfield Borough	7.42	9.78	2.97	10.06	77.07	107.31
Gloucester City	1.72	52.27		3.67	42.79	100.44
Stratford	0	15.88	1.56	8.44	72.24	98.11
Somerdale	3.37	11.65	0	4.45	78.63	98.09
Haddon Township	0.13	10.45	0	8.96	71.79	91.33
Haddon Heights	2.53	0	0.01	0	57.06	59.59
Magnolia	2.36	0	0	0	49.19	51.55
Tavistock Borough	0	0	31.61	0	2.44	34.05
Mount Ephraim	10.51	0.00	0	0	14.92	25.43
Pine Valley	0	0	20.33	0	1.69	22.03
Hi-Nella	0	0.15	19.42	0	0.41	19.98
Collingswood	0.14	4.62	0	4.99	6.98	16.73
Oaklyn	9.43	0.02	0	0	7.04	16.49
Audobon	1.33	0.06	0.52	0.01	9.96	11.89
Brooklawn	0	9.59	0	1.40	0.77	11.76
Winslow	0	0	0	0	10.02	10.02
Audubon Park	0	0	3.08	0	0	3.08
Laurel Springs	0.61	0.04	0	0	1.39	2.05
Woodlynne	0	0.07	0	0.30	0.83	1.20
Merchantville	0	0	0	0	0.70	0.70
Total	**169.50**	**732.08**	**79.51**	**261.01**	**9,177.94**	**10,420.03**

SDVR NJ Multi-Jurisdictional Hazard Mitigation Plans
Critical Facilities to Photograph
7/31/08

Gloucester County Hazard Mitigation – Identified Structures 7/31/08

West Deptford xxx: Elevation of trailers and levee around Willow Wood Trailer Park located off of Crown Point Rd.

West Deptford xxx: Elevation and easements on West 1st Ave between Mantua and West Deptford Municipalities

Harrison xxx: Property Acquisition: Private House located at Ellis Mill Road at Lake Gilman

Harrison xxx: Flood Proofing/ Small Scale Structural Solutions including conveyance and drainage on Fire/EMS (Harrison Firehouse) located on 312 Ewan Road, Mullica Hill

Harrison xxx: Flood Proofing/ improved conveyance/drainage of Water Facility. (Harrison Township Waste Water Treatment Facility) located on Woodland Avenue

Swedesboro xxx: Envelope Hardening and improved load path for Police (Borough Hall located on Kings Hwy.

Swedesboro xxx: Envelope Hardening and improved load path for Fire/EMS (Swedesboro fire department) located at Kings HW and Auburn Rd.

Woodbury Heights xxx: Improved conveyance, drainage and channel maintenance in Summit Section of Woodbury Heights. (Beech Street, Fordham Street, Alliance Street, Linden Street)

Woodbury Heights xxx: Critical facilities protection of water facility (town well) located on Helen Avenue (water tank is on Grand View street).

Clayton xxx: Structural Retrofit of homes located between North Street and Main Street

Clayton xxx: Envelope/Improved path structural retrofits of Data Storage (Clayton Community Recreation Center) located on Washington Avenue.

Clayton xxx: Envelope/improved path/ structural retrofits and secure roof ballast of EOC and Police (Municipal Building) located on State HW, route 47.

Clayton xxx: Structural Retrofit of Rustic Village Apartments - located on route 47. (Buildings units A-K)

Clayton xxx: Secure roof ballast of Shelter (Herma Simmons Elementary School) located on 300 West Chestnut Avenue.

Woolwich xxx: Elevation and flood proofing or Acquisition of home located at 87 Liccardello Drive.

Woolwich xxx: Floodwalls for High Hill Road and Moravian Road

Franklin xxx: Flood proofing, elevation OR acquisition of Police/ EOC center (municipality building) Located in floodplain area next to Sharon Lake on Delphi Drive.
Franklin xxx: Acquisition or flood proofing of houses around Franklin Lake, Iona Lake, McCarty's Lake. (Other lakes in municipality that are surrounded by residential areas and are affected by flooding.

Franklin xxx: Envelope hardening/ secure roof ballast of Shelter (Regional High School).

Monroe xxx: Dry Flood proofing of (2) homes located next to Victory Lake and Timber Lake.

Monroe xxx: Fixing (1) Dam located by Victory Lake.

South Harrison xxx: Envelope hardening, secure roof ballast, and improved load path of Fire/EMS building located on Main Street.

Woodbury City xxx: Detention/Improved conveyance of EOC/Data Storage (City Hall) located at 33 Delaware Street.

Woodbury City xxx: Improved conveyance/ flood proofing and envelope hardening of Colonial Park Senior Citizen Center located at 401 S. Evergreen St.

Woodbury City xxx: Improved conveyance/drainage of following streets: East Red Bank Ave, South Evergreen Ave, South Barbara Ave, Packard Ave, between Logan and South Columbia Street, Delaware Street, Drexel Street, Child Street, Gerard Street, between Salem Ave and Glover Street.

Woodbury City xxx: Property Acquisition: Private House located at Ellis Mill Road at Lake Gilman

Woodbury City xxx: Elevation of residences on Packard Ave.

6.4 Methodology for Identifying Hazards of Concern

In accordance with the requirements of the Interim Final Rule all hazards with potential to affect Middlesex County are profiled in this section of the Plan. However, because this is a County-level hazard mitigation plan it is useful to identify the hazards that are of the most concern County-wide, so these can be the focus of more detailed assessment. It is important to note, however, that many hazards and risks are very site-specific, so as local municipalities perform more detailed risk assessments and identify mitigation actions they should recognize that this process and the resulting table should be used only as a guide. The table below lists the hazards, describes the rationale for identifying (or not identifying) hazards as significant, shows sources of information that were consulted for the determination, and the disposition of the hazard with regard to hazard identification and risk assessment in this plan. The initial hazards in the shaded portion of the table are those that were identified by Middlesex County's HMSC as significant enough to warrant a full risk assessment.

Table 6.4-1
Middlesex Qualitative Hazard Ranking

Hazard	Rationale	Sources	Disposition
Flooding	Widespread impacts, history of occurrences in the County, significant annual damages	FEMA Flood Insurance Studies, FEMA Flood Insurance Rate Maps, FEMA Public Assistance records, FEMA National Flood Insurance Program claims data, US Army Corps of Engineers (USACE), and National Oceanographic and Atmospheric Administration (NOAA), studies and records.	Profile and risk assessment
High Wind - Straight Line winds (Includes: Hurricane, Nor'easter, Tropical Storm, and Severe Storm)	▪ Hurricanes: Relatively low historic probability; potential for widespread impacts. ▪ Tropical Storms: Low to moderate probability; potential for widespread impacts ▪ Nor'easters: Moderate probability of more extreme events, potential for moderately widespread impacts. ▪ Severe Storms: High probability of occurrences, but losses are typically limited	NOAA and National Climatic Data Center (NCDC) records, New Jersey Department of Community Affairs - Division of Codes and Standards, New Jersey State Climatologist (Rutgers)	Profile and risk assessment
Severe Storm - Winter Weather	High annual probability, widespread impacts, but losses generally limited except in most extreme events.	NOAA, NCDC, National Weather Service (NWS), New Jersey State Climatologist (Rutgers)	Profile and risk assessment
Earthquake / Geological	Relatively low annual probability, but potential for significant consequences.	United States Geologic Survey (USGS), New Jersey Geologic Survey (NJGS).	Profile and risk assessment

Hazard	Rationale	Sources	Disposition
Hazardous Material Releases – Fixed Sites	High annual probability with impacts potentially severe in site specific areas.	US Environmental Protection Agency, FEMA HAZUS (Hazards US) software, the Right-to-Know (RTK) Network, US Environmental Protection Agency (EPA).	Profile and risk assessment
Hazardous Material Releases – Transportation	Moderate to high annual probability, but impacts limited in severity and area.	The RTK Network – Emergency Response Notification System (ERNS)	Profile and risk assessment
Dam Failure	Low annual probability based on historical data, but impacts potentially significant in site specific areas.	New Jersey Department of Environmental Protection (NJDEP) – Dam Safety and Flood Control.	Profiled, but not part of detailed risk assessment
Erosion – Hurricane/Nor'easter/ Coastal Storm	Relatively high annual probability, but impacts are limited to northeastern coastal areas.	NOAA, The New Jersey Beach Profile Network (NJBPN), USACE	Profiled, but not part of detailed risk assessment
Ice Storm	Low to moderate annual probability with impacts relatively limited	NOAA - NCDC, New Jersey State Climatologist (Rutgers), National Weather Service	Profiled, but not part of detailed risk assessment
Storm Surge – Hurricane/ Nor'easter/ Coastal Storm	Relatively low probability, impacts limited to northeastern coastal areas	NOAA - NCDC,USACE	Profiled, but not part of detailed risk assessment
Drought	High annual probability, but impacts generally limited.	NOAA – NCDC; New Jersey State Department of Agriculture NJDEP	Profiled, but not part of detailed risk assessment
Extreme Temperature - Cold	Relatively high annual probability, but impacts are limited.	NOAA - NCDC, New Jersey State Climatologist (Rutgers), National Weather Service	Profiled, but not part of detailed risk assessment
Extreme Temperature - Heat	Relatively high annual probability, but impacts are limited.	NOAA - NCDC, New Jersey State Climatologist (Rutgers), National Weather Service	Profiled, but not part of detailed risk assessment
Hail	High annual probability but impacts are limited in severity and area	NOAA – NCDC, New Jersey State Climatologist (Rutgers), National Weather Service	Profiled, but not part of detailed risk assessment
High Wind - Tornado	High annual probability, widespread impacts, but losses generally limited except in most extreme events.	NOAA -NCDC,, New Jersey State Climatologist (Rutgers), National Weather Service	Profiled, but not part of detailed risk assessment
Landslide (non-seismic)	Low probability with losses typically limited	NJGS	Profiled, but not part of detailed risk assessment
Severe Storm - Lightning	High annual probability, but impacts generally limited	NOAA –NCDC, New Jersey State Climatologist (Rutgers), National Weather Service.	Profiled, but not part of detailed risk assessment
Wildfire	High annual probability of site-specific events, but impacts generally limited	NOAA, New Jersey State Forest Fire Service, NJDEP.	Profiled, but not part of detailed risk assessment

Note: The data in this table is intended only to give a general sense of the significance of hazards in the County, relative to each other. See Appendix B (Section 6) for a complete listing of all sources.

SDVR NJ Multi-Jurisdictional Hazard Mitigation Plans
Municipal Outreach Call Log
7/31/08

muni name	contact name	meeting set for (date/time)	meeting happens (X)	comments
Clayton	Sam Teague	7/21 1pm	X	Not listed in directory - left a message with water and sewer department/ he called back/ emailed
Deptford	Don Banks			Left a message/ email
East Greenwich	Greg Price			Left a message with public works office/ email
Elk	Milton Sahms			Received Milton's contact info from Steve Alexander (856.881.5621)/ Email follow-up regarding questions.
Franklin	Michael Digiorgio	7/21 2pm 7/24 9:30am	X	Left a message with public works office/ email/ **missed meeting**
Glassboro	Troy Armstrong			Left a message with the police department receptionist. Took my message for Mr. Armstrong/ email/
Greenwich	Al Silbaugh	7/21 AM 7/22 1:10pm	X	Left a message with water and sewer department/ email/ emailed me back. Will contact me 7/21 in the am/Called me/Retuned his call/ Called again - **he stated that he had submitted these items through someone at Len Clarke's office. They included the action items.**
Harrison	Ed Selb	7/14 9am	X	
Monroe	Frank McLaughlin	7/28 10am	X	
Palsboro	Glenn Roemmich			Call back Tuesday/ email
Pitman	Scott Campbell			Left a message with the police department/ email
South Harrison	Tom Luchay	7/28 9:00am	X	Left a message with the police department/ email/ emailed me back and will contact me after july 23rd.
Swedesboro	Eric Voight	7/22 8am	X	

SDVR NJ Multi-Jurisdictional Hazard Mitigation Plans
Municipal Outreach Call Log
7/31/08

muni name	contact name	meeting set for (date/time)	meeting happens (X)	comments
Washington	Frank Gurscik/ Chief Muniz	7/29 AM		*Left a message with the police department. Called back and was referred to Chief Muniz (856.589.6664) Call and left a message 7/16. / Called and left a message 7/29.*
Wenonah	Doug Raggio			Left a message with public works/ email/ will contact me the week of the 28th
Westvilled	William Bittner			*Call after 9am next week to make an appointment./ called again- secretary took message*
Woodbury Heights	William Schweigart	7/22 9:00am	X	Left a message for BARBARA Schweigart. Will be back after the 15th./ Email
Woolwich	Glenn Rambo	7/22 9:30am 7/24 9:00am	X	Left a message/ email/ missed appointment - left a message
Newfield	Toni VanCamp			Could not leave a message because mailbox was full/ email
Mantua	Rodney Sawyer			Email/ call - left a message
West Deptford	Tom Campo	8/1 11:30am		Call and left a message/ emailed (tcampo@co.gloucester.nj.us - 856.384.6899)
Woodbury	Stephen Cope	7/30 2pm	X	Called /Email/ 7/18 afternoon or the week of the 28th/ **missed meeting/ emailed**
National Park	Dennis Kappler			Email/ Called - busy signal
Logan	Andy Lovell			Email/ call - left a message

SDVR NJ Multi-Jurisdictional Hazard Mitigation Plans
Municipal Outreach Call Log
7/31/08

muni name	contact name	meeting set for (date/time)	meeting happens (X)	comments

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
HARRISON								
Action xxx: Property Acquisition: Private House located at Ellis Mill Road at Lake Gilman	Flood	Existing	Floodplain Management Plan	Harrison Municipality	3 years	unknown	FEMA	Low
Action xxx: Flood Proofing/ Small Scale Structural Solutions including conveyance and drainage on Fire/EMS (Harrison Firehouse) located on 312 Ewan Road, Mullica Hill	Flood	Existing	Wind/severe weather hardening	Harrison Municipality	3 years	unknown	FEMA and/or Fire District Capital Improvement	Medium
Action xxx: Flood Proofing/ improved conveyance/drainage of Water Facility. (Harrison Township Waste Water Treatment Facility) located on Woodland Avenue	Flood	Existing	Capital Improvement Plan	Harrison Township Waste Water Treatment Facility,	3 years	unknown	Harrison Township Waste Water Treatment Facility and FEMA	Medium
SWEDESBORO								
Action xxx: Engineering study to assess risk for Ore Dam located on Lake Narritockin	Flood	Existing	Capital Improvement Plan	Borough of Swedesboro	3 years	unknown	FEMA	Low

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Envelope Hardening and improved load path for Police (Borough Hall located on Kings Hwy.	Wind	Existing	Wind/severe weather hardening	Borough of Swedesboro	1-2 years	unknown	FEMA	Low
Action xxx: Envelope Hardening and improved load path for Fire/EMS (Swedesboro fire department) located at Kings HW and Auburn Rd.	Wind	Existing	Wind/severe weather hardening	Borough of Swedesboro	1-2 years	unknown	FEMA	Low
WOODBURY HEIGHTS								
Action xxx: Improved conveyance, drainage and channel maintenance in Summit Section of Woodbury Heights. (Beech Street, Fordham Street, Alliance Street, Linden Street)	Flood	Existing	Capital Improvement Plan	Woodbury Heights Borough	1 year	Approximately $50,000 PER street.	FEMA/Woodbury Heights Borough	High
Action xxx: Critical facilities protection of water facility (town well) located on Helen Avenue (water tank is on Grand View street).	Flood	Existing	Floodplain Management Plan	Woodbury Heights Borough	1 year	$65,000	FEMA	High
Action xxx: Generator for EOC (municipality building)	Flood	New	Capital Improvement Plan	Woodbury Heights Borough	1 year	unknown	FEMA/Woodbury Heights Borough	High
CLAYTON								

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Structural Retrofit of homes located between North Street and Main Street	Flood	Existing	Floodplain Management Plan	Clayton Municipality	1 year	unknown	FEMA/Clayton	High
Action xxx: Engineering study to assess risk of Silver Lake Dam located on West Clayton Avenue.	Flood	Existing	Floodplain Management Plan	Clayton Municipality	3 years	unknown	FEMA/Clayton	Low
Action xxx: Envelope/Improved path structural retrofits of Data Storage (Clayton Community Recreation Center) located on Washington Avenue.	Flood/ Wind	Existing	Floodplain Management Plan	Clayton Municipality	1 year	unknown	FEMA	High
Action xxx: Envelope/improved path/ structural retrofits and secure roof ballast of EOC and Police (Municipal Building) located on State HW, route 47.	Flood/Wind	Existing	Capital Improvement Plan	Clayton/FEMA	1 year	unknown	FEMA	High
Action xxx: Structural Retrofit of Rustic Village Apartments - located on route 47. (Buildings units A-K)	Wind	Existing	Capital Improvement Plan	Clayton Municipality	3 years	unknown	FEMA	Low

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Secure roof ballast of Shelter (Herma Simmons Elementary School) located on 300 West Chestnut Avenue.	Wind	Existing	Capital Improvement Plan	Clayton Municipality	2 year	unknown	FEMA	Low
Action xxx: Critical facilities protection/hazard threat recognition of Hazmat (Propane Tank Farm) located on Delphi Drive route 47.	Hazmat -fixed site	Existing	Private Channel	Propane Tank Farm	1 year	unknown	Federal Grant	Medium
Action xxx: Critical facilities protection/hazard threat recognition of Hazmat (Aleris Light Aluminum Company)	Hazmat -fixed site	Existing	Private Channel	Aluminum Company	1 year	unknown	Federal Grant	Medium
WOOLWICH								
Action xxx: Elevation and flood proofing or Acquisition of home located at 87 Liccardello Drive.	Flood	Existing	Private Channel	Home Owner	1-3 years	50,000 - 100,-000	FEMA	Low
Action xxx: Floodwalls for High Hill Road and Moravian Road	Flood	Existing	Floodplain Management Plan	Woolwich Municipality	3 years	unknown	FEMA	Low

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Critical facilities protection/hazard threat recognition of Hazmat (Graso Food Products - the largest pepper packing plant in the country. Services all 50 states - tier one facility.)	Hazmat-fixed Site	Existing	Private Channel	Graso Food Products Company	2 year	unknown	Federal Grant	Medium
FRANKLIN								
Action xxx: Flood proofing, elevation OR acquisition of Police/ EOC center (municipality building) Located in floodplain area next to Sharon Lake on Delphi Drive.	Flood	Existing	Floodplain Management Plan	Franklin Township	1-5 years	5-6 million dollars	FEMA	High
Action xxx: Acquisition or flood proofing of houses around Franklin Lake, Iona Lake, McCarty's Lake. (Other lakes in municipality that are surrounded by residential areas and are affected by flooding.	Flood	Existing	Floodplain Management Plan	Franklin Township	1-5 years	unknown	FEMA	Low

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Modify building materials, revisit response and evacuation plans, fire lanes and education for residents in the Pinelands .	Wildfires	Existing	Capital Improvement Plan	Franklin Township	1-5 years	unknown	FEMA/Franklin Township	Low
Action xxx: Envelope hardening/ secure roof ballast of Shelter (Regional High School).	High Wind	Existing	Capital Improvement Plan	Franklin Township	5 years	unknown	FEMA	Low
Action xxx: Engineering study to access risk and maintenance of Franklin Lake Dam, Iona Lake Dam and McCarty's Lake Dam.	Flood	Existing	Floodplain Management Plan	Franklin Township	1 year	30,000-60,000 for evaluation PER dam.	FEMA	High
Action xxx: Critical facilities protection/hazard threat recognition of hazmat (freight rail which carries chlorine and runs behind high occupancy apartment building of 40-50 families).	Hazmat - transportation	Existing	Unknown	Private	3-5 years	unknown	Federal Grant	Low

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Critical facilities protection/hazard threat recognition of hazmat (Downstown Arrow crop Service Airport which contains a lot of chemicals and services NJ)	Hazmat - transportation	Existing	Unknown	Arrow Crow Service Airport	3 years	unknown	Federal Grant	Medium
MONROE								
Action xxx: Conveyance/Drainage, Floodplain development regulation and evaluation of pipes on Main Street Area.	Flood	Existing	Floodplain Management Plan	Monroe Municipality	2 years	unknown	FEMA	Medium
Action xxx: Building evaluation of EOC located in Municipal Building on 125 Virginia Ave	Flood	Existing	N/A	Monroe Municipality	2 years	unknown	FEMA	Medium
Action xxx: Dry Flood proofing of (2) homes located next to Victory Lake and Timber Lake.	Flood	Existing	N/A	Private Owner	3 years	unknown	FEMA	Low
Action xxx: Fixing (1) Dam located by Victory Lake.	Flood	Existing	Project currently ongoing. Two other dams fixed in the same area.	Monroe Municipality	1 year	unknown	unknown	High
SOUTH HARRISON								

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Envelope hardening, secure roof ballast, and improved load path of Fire/EMS building located on Main Street.	Wind	Existing	Unknown	South Harrison Township	1 year	unknown	FEMA	Low
Action xxx: Public education and outreach program for residents in trailer park for hurricane/evacuation strategies. (Park located between Harrisville Road and Cedar Grove)	Hurricane	Existing	Unknown	South Harrison Township	1 year	unknown	FEMA	Medium
Action xxx: Generator for Communications Facility (Repeater Tower)	Wind/ Severe Weather/Flood	Existing	Unknown	South Harrison Township	2 years	unknown	FEMA	Low
WOODBURY CITY								
Action xxx: Detention/Improved conveyance of EOC/Data Storage (City Hall) located at 33 Delaware Street.	Flood	Existing	Floodplain Management Plan	Woodbury Heights City	1 year	unknown	FEMA/Woodbury City	Medium

Mitigation action, program or project	Hazard(s) addressed	Applies to existing or new structures	Existing local planning mechanism through which action will be implemented	Responsible Party	Target Date	Estimated cost ($)	Funding Source	Priority
Action xxx: Improved conveyance/ flood proofing and envelope hardening of Colonial Park Senior Citizen Center located at 401 S. Evergreen St.	Flood/Wind	Existing	Unknown	Woodbury Heights City	3 years	unknown	FEMA	Low
Action xxx: Improved conveyance/drainage of following streets: East Red Bank Ave, South Evergreen Ave, South Barbara Ave, Packard Ave, between Logan and South Columbia Street, Delaware Street, Drexel Street, Child Street, Gerard Street, between Salem Ave and Glover Street.	Flood	Existing	Floodplain Management Plan	Woodbury City	2 years	300,000 min. per street	FEMA	Medium
Action xxx: Elevation of residences on Packard Ave.	Flood	Existing	Floodplain Management Plan	Woodbury City	1 year	unknown	FEMA	Medium

SDVR NJ Multi-Jurisdictional Hazard Mitigation Plan
Document drafting timeline
8/5/08

task/event (meeting = "X")	8/18-22	8/25-29	9/1-5	9/8-12	9/15-19	9/22-26	9/29-10/3	10/6-10	10/13
SDVR complete draft									
complete rough draft done									
JLWA QAQC/tech editing									
doc to client									
client review/ SDVR steering committee					X				
JLWA final edits/ client changes									
submit to NJOEM									
SDVR working group/ public meeting (TBD)						<----->			

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group/ Public Meeting Agenda
August 19, 2008

A. Introductions
B. Municipal participation
C. Where we are in the hazard mitigation planning process
D. Review/discuss work in progress (mitigation action plan)
E. Next steps
F. Questions and discussion
G. Develop action plans with municipalities that do not yet have them

Gloucester County, NJ Multi-Jurisdictional Hazard Mitigation Plan

Working Group/Public Meeting, August 19, 2008

PREPARED FOR:

Gloucester County

Office of Emergency Management

PREPARED BY:

Agenda

- Introductions
- Municipal participation
- Where we are in the planning process
- Review/discuss work in progress (mitigation action plan)
- Next steps
- Questions and discussion
- *Develop municipal action plans, as needed*

Introduction

Municipal Participation

Municipal Participation: Eligibility Requirements

- Responding to data and document requests, including <u>generating mitigation actions</u>
- On-line Capability Assessment
- Completing Critical Facility inventories and prioritization
- Meeting attendance
- Plan adoption (at the end of the process)

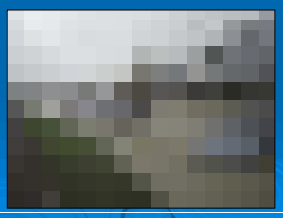
Municipal Participation: Eligibility Implications

- Pre-disaster hazard mitigation grant programs
- Post-disaster public assistance and hazard mitigation grant programs

Where We are in the Process

Where We are in the Process: What is "Hazard Mitigation"?

Any measures undertaken to reduce the risks posed by natural and/or manmade hazards on a place and its population.



Where We are in the Process: How is the Plan Developed?

Mitigation planning all boils down to **two basic questions**:

- What hazards present the greatest risk to the County and its citizens?
- What are the most effective ways to reduce those risks?

Where We are in the Process: Plan Development

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Where We are in the Process: Plan Development

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Where We are in the Process: Public Involvement

- Press releases
- Public meetings
- Website postings: www.ccpublicsafety.org/hm/hm_home.htm
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Work in Progress: Mitigation Action Plan

Mitigation Action Plan: Goals

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 1: Education/Outreach

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 1: Education/Outreach

- Goal 1: Improve Education and Outreach
  - "All hazards" public education and outreach
  - Public awareness program on local TV
  - Annual workshops related to FEMA grants, targeted to the public and to municipal and other subgrantees
  - Participate in state (NJOEM, NJFS) outreach

Mitigation Action Plan: Goal 2: Improve Data

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 2: Improve Data

- Goal 2: Improve Data Collection, Use, Sharing
  - Develop and maintain relationships with organizations that maintain and store relevant data
  - Coordinate with ongoing efforts to develop and maintain relevant data
  - Undertake site-specific studies related to flood risks
  - Undertake detailed vulnerability assessments of critical facilities in V or VE zones
  - Continuously update RL/SRL lists

Mitigation Action Plan: Goal 2: Improve Data

- Goal 2: Improve Data Collection, Use, Sharing
  - Participate in state's Emergency Preparedness Conference
  - Develop database of critical facilities, including relevant exposure data
  - Complete site surveys of critical facilities identified as high priorities

Mitigation Action Plan: Goal 2: Improve Data

- Actions to Better Assess Risks
  - Work with NJGS to determine soil and shake characteristics at critical sites
  - Conduct wind assessments on high-priority facilities
  - Conduct wildfire assessments for areas with high hazard potential and exposure
  - Integrate hazmat data with data related to other risk factors
  - Identify areas with hazard and exposure to storms
  - Conduct detailed risk assessments related to dams and levees with high vulnerabilities and/or exposure

Mitigation Action Plan: Goal 3: Improve Capabilities

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 3: Improve Capabilities

- Goal 3: Improve Capabilities, Coordination, and Opportunities
  - Keep RL/SRL mitigation a high priority and provide technical support
  - Provide grants information to potential subgrantees
  - Increase NFIP and CRS participation
  - Enforcement of floodplain management and integration with zoning, subdivision regs., etc. using local and state tools
  - Support appropriate legislative and rules changes at the state/federal levels (TBD)
  - Explore opportunities for direct county support for mitigation planning/implementation

Mitigation Action Plan: Goal 4: Mitigation

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 4: Mitigation

- Goal 4: Pursue Mitigation Opportunities
  - Develop SRL strategy that will qualify for 90:10 cost share under FEMA SRL program
  - Promote acquisition and elevation of RL/SRL structures
  - Implement local mitigation projects (detailed in following slides)

Mitigation Action Plan: Clayton Borough

- Structural retrofit of homes located between North Street and Main Street
- Engineering study to assess risk of Silver Lake Dam located on West Clayton Avenue
- Envelope and improved path structural retrofits of data storage facility located at Clayton Community Recreation Center on Washington Avenue
- Envelope, improved path, structural retrofits, and secure roof ballast of EOC located in Clayton Municipal/Police Building on State Highway Route 47
- Structural retrofit of Rustic Village Apartments located on Route 47

Mitigation Action Plan: Clayton Borough (continued)

- Secure roof ballast of shelter at Herma Simmons Elementary School located on West Chestnut Avenue
- Critical facilities protection and hazard threat recognition of propane tank farm located on Delphi Drive Route 47
- Critical facilities protection and hazard threat recognition of Aleris Light Aluminum Company facility

Mitigation Action Plan: Deptford Township

- Hardening and retrofitting of EOC facility located in Municipal Building on Cooper Street
- Engineering Assessment to assess risk of Almonesson Lake Dam located on Cooper Street

Mitigation Action Plan: East Greenwich Township

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Elk Township

- Engineering assessment to assess risk of dam located in Lake Garrison on Country Road Route 553
- Engineering assessment to assess risk of dam located in Lake Gilman on County Road Route 641
- Engineering assessment to assess risk of Hackney Dam located on Richwood Road
- Retrofitting and hardening of data storage facility located in Municipal Building on Country Road Route 667

Mitigation Action Plan: Franklin Township

- Flood proofing, elevation, or acquisition of EOC located in Police/Municipal Building on Delphi Drive
- Acquisition or flood proofing of homes around Franklin Lake, Iona Lake, and McCarty's Lake
- Revisit response plans, evacuation plans and fire lane locations, modify building materials, and provide education on wildfire safety for residents in the Pinelands area
- Envelop hardening and secure roof ballast of shelter at Regional High School
- Engineering studies to access risk and maintenance of Franklin Lake Dam, Iona Lake Dam and McCarty's Lake Dam

Mitigation Action Plan: Franklin Township (continued)

- Critical facilities protection and hazard threat recognition of freight rail carrying chlorine
- Critical facilities protection and hazard threat recognition of Downstown Arrow Corp Service Airport

Mitigation Action Plan: Glassboro Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Greenwich Township

- Improved conveyance/drainage/floodproofing for EOC/Fire Building on Broad St.
- Improved conveyance/drainage/floodproofing for wastewater treatment facility on Washington St.
- Improved conveyance/drainage/floodproofing for Nuhansey School shelter on Swedesboro Rd.
- Improved conveyance/drainage for Valero Refinery at Billingsport Rd.

Mitigation Action Plan: Harrison Township

- Property acquisition of home located at Ellis Mill Road on Lake Gilman
- Flood proofing and small scale structural solutions including conveyance and drainage of the Fire/EMS Station located on Evan Road, Mullica Hill
- Flood proofing, improved conveyance, and drainage of Harrison Township Waste Water Treatment facility located on Woodland Avenue

Mitigation Action Plan: Logan Township

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Mantua Township

- Engineering study to assess risk of dam located on Lambs Road
- Improved conveyance and drainage on Route 45
- Elevation, improved drainage, conveyance, and flood wall for homes located on Hickory Avenue
- Flood proofing, improved drainage, and conveyance of Police Department and data storage facility located on Main Street
- Relocate utility lines underground in the southern end of Mantua Township

Mitigation Action Plan: Monroe Township

- Conveyance, drainage, and floodplain development regulation and evaluation of pipes on Main Street area
- Building evaluation of EOC located in Municipal Building on Virginia Avenue
- Dry flood proofing of two homes located next to Victory Lake and Timber Lake
- Fixing dam located by Victory Lake

Mitigation Action Plan: National Park Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Newfield Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Paulsboro Borough

- Improved conveyance and drainage of Huff Avenue, Thomas Avenue, and 500 block of Delaware Street

Mitigation Action Plan: Pitman Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Rowan University

- Flood proofing, improved conveyance and drainage of shelter at Recreation Center
- Construct bulkhead and improve retention and conveyance of Chestnut Branch Creek
- Improve drainage around Triad Apartments and Bunce Academic Building
- Working on Homeland Security initiatives and educational programs relating to campus safety including, evaluating campus lock down processes, evacuation procedures and emergency communication methods

Mitigation Action Plan:
South Harrison Township

- Envelope hardening, secure roof ballast, and improved load path of Fire/EMS Building located on Main Street
- Public education and outreach program regarding hurricane/evacuation strategies for residents in trailer park located between Harrisville Road and Cedar Grove
- Generator of Communications Facility

Mitigation Action Plan:
Swedesboro Borough

- Engineering study to assess risk of Ore Dam located on Lake Narritockin
- Envelope hardening and improved load path for Police Department located in Borough Hall on Kings Highway
- Envelope hardening and improved load path for Fire/EMS Swedesboro Fire Department located at Kings Highway and Auburn Road

Mitigation Action Plan:
Washington Township

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan:
Wenonah Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan:
West Deptford Township

- Elevation of trailers and levee around Willow Wood Trailer Park located off of Crown Point Road
- Elevation and easements on West 1st Avenue between Mantua and West Deptford Townships

Mitigation Action Plan:
Westville Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Woodbury City

- Detention and improved conveyance of EOC and data storage facility located at City Hall on Delaware Street
- Improved conveyance, flood proofing, and envelope hardening of Colonial Park Senior Citizen Center located on Evergreen Street
- Improved conveyance and drainage of the following streets: East Red Bank Avenue, South Evergreen Avenue, South Barbara Avenue, Packard Avenue, Delaware Street, Drexel Street, Child Street, and Gerard Street
- Elevation of residences on Packard Avenue

Mitigation Action Plan: Woodbury Heights Borough

- Improved conveyance, drainage, and channel maintenance in Summit Section on Beech Street, Fordham Street, Alliance Street, and Linden Street
- Critical facilities protection and hazard threat recognition of water sewage facility and pipes
- Critical facilities protection of water facility located on Helen Avenue
- Generator for EOC located in Municipal Building

Mitigation Action Plan: Woolwich Township

- Elevation, flood proofing, or acquisition of home located on Liccardello Drive
- Floodwalls for High Hill Road and Moravian Road
- Critical facilities protection and hazard threat recognition of Graso Food Products facility

Next Steps

Next Steps: Plan Document Review

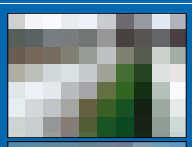
- Complete draft plan available for comment Sept. 9
- Submission to NJOEM/ FEMA RII early October
- Necessary revisions (?)
- Participating jurisdictions adopt plan
- Participating jurisdictions implement the plan and monitor progress
- Five-year plan update cycle

Next Steps: Meetings

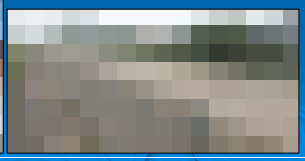
- Mitigation Goals, Objectives & Actions Review
  - Working Group/ Public Meeting: Today
- Plan Document Review
  - Working Group/ Public Meeting: Sept./Oct.

Questions and Discussion

Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

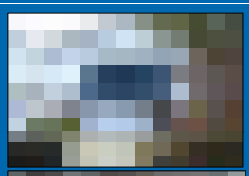


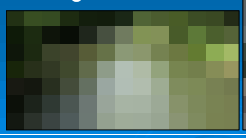
Hazard mitigation measures can include **structural projects** like levees, dams, or safe rooms.

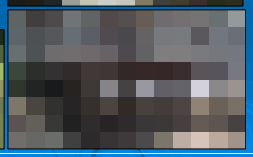


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

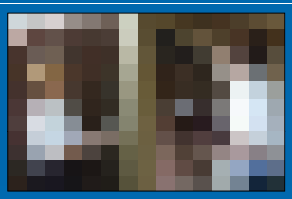
Also, **non-structural projects** like acquisition, elevation, retrofit of buildings, or vegetation management…





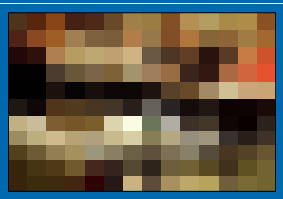


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…**regulatory practices** like enacting or enforcing building codes, permits, or land use policies…

Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…or **training and educational programs** for communities and local agencies.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Soft" mitigation projects include mitigation activities such as:

- building code enforcement
- land development regulations
- public education
- studies and plans
- etc.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Hard" mitigation projects or "property protection" construction activities:

- acquisition / elevation / mitigation reconstruction of structures
- retrofits for high wind loads such as installing hurricane shutters
- improving drainage
- etc.

Hazard Mitigation Planning Overview: Acquisition

- Most cost-effective mitigation measure.
- Permanently removes vulnerable property.
- Structure: demolished or relocated; land: open space in perpetuity.
- Requires willing sellers and communities.

Source: *Missouri Buyout Program 2002*

Hazard Mitigation Planning Overview: Elevation

- Raising a structure above Base Flood Elevation.
- Building size, structural integrity, and type of foundation must be considered.
- Different types of elevation appropriate depending on the structure.

A Miami house being elevated (top) and post-elevation (bottom)
Source: FEMA, *Above the Flood*, 2000

Hazard Mitigation Planning Overview: Mitigation Reconstruction

- Pilot program funded under Disaster Declarations 1603 and 1607 (Hurricanes Katrina and Rita)
- If acquisition and elevation are not feasible then a structure may be demolished and reconstructed at the same location.

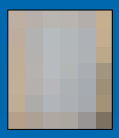
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

Potential projects for civic buildings, health care facilities, utilities, police stations, fire stations, EOCs, jails, schools:

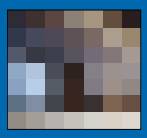
- Shutters/ impact resistant glass in windows
- Strengthen doors
- Hurricane straps/ clips to strengthen roof
- Bolt walls to foundation
- Bury utility lines underground
- Elevate the heating/ventilating/cooling equip.

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

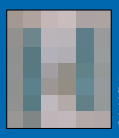
- Install shutters or impact resistant glass on windows



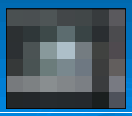
Accordion Shutters



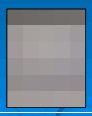
Roll-Down Shutters



Colonial Shutters



Impact Resistant Glass



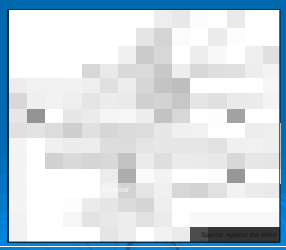
Corrugated Metal Panel

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Strengthen the doors.

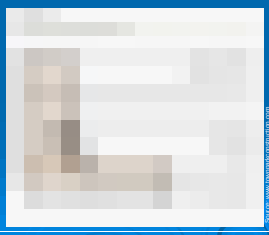
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Install hurricane straps and clips to strengthen roof.



Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Bolt walls to foundation.

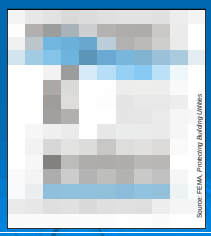


Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Relocate utility lines underground.

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Elevate the heating, ventilating and cooling (HVAC) equipment, such as furnace and hot water heater.



Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

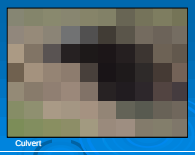
Potential Projects for pump stations, water control facilities, water treatment and delivery systems, power generation facilities, sewage collection and treatment facilities:

- Install backflow valves
- Elevate the generators and pumps
- Anchor fuel tanks
- Eliminate infiltration problems with underground utility systems

Hazard Mitigation Planning Overview: Drainage Improvements

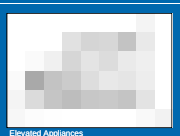
- Creating detention/ retention ponds and reservoirs
- Building floodwalls and diversions
- Constructing storm sewers and increasing culvert capacity
- Maintenance is not an eligible project

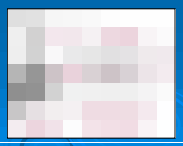

Detention Pond


Culvert

Hazard Mitigation Planning Overview: Wet Floodproofing

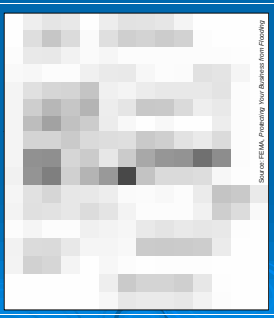
- Modifying uninhabited portions of a structure to allow water in without significant damage
- Water-resistant materials
- Limited use: not practical for structures with living space at ground level, and does not mitigate high velocity floods


Elevated Appliances
source: www.louisianafloods.org


From www.louisianafloods.org

Hazard Mitigation Planning Overview: Dry Floodproofing

- Structure made watertight below vulnerable areas
- Walls sealed and openings waterproofed
- Useful vs. brief floods, <3 ft deep
- Ineffective vs. fast waters

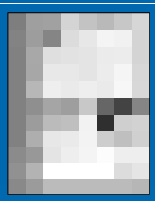

Source: FEMA, *Protecting Your Business from Flooding*

Hazard Mitigation Planning Overview: Community Shelters

- A structure built to withstand extreme winds and flying debris from tornadoes, hurricanes, and other storms that is accessible to the public.
- Guidelines can be found in FEMA 361.
- The shelter cannot be used for anything else.

Hazard Mitigation Planning Overview: Safe Rooms

- Built onsite or manufactured.
- In new or existing homes.
- Need adequate ventilation.
- Anchored to the foundation and structurally isolated from the main structure.
- First floor, basement, or outside.
- See FEMA Publication 320



Hazard Mitigation Planning Overview: 5% Initiative Mitigation Projects

Projects that are eligible for funding can include new, unproven mitigation techniques and technologies where benefits are not proven or not clearly measurable, such as:

- Generators; or
- Disaster warning equipment and systems.

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Meeting Agenda
September 19, 2008

1. Misc. & housekeeping
    a. Any SharePoint issues?
    b. Any force-accounting or grant-related issues?
        i. Each county coordinator is responsible for providing documentation supporting staff benefits calculations, as part of the match
2. Meetings and scheduling
    a. Working Group/ Public Meetings:
        i. Salem 9/25, 7pm
        ii. Camden 10/1, 7pm
        iii. Cumberland 10/2, 7pm
        iv. Gloucester 10/2, 7:30pm
    b. Next Steering Committee Meeting
        i. Tentative for 10/21
        ii. But: NJAFM conflict? Lack of likely new business?
3. Committee Draft review
    a. General thoughts/comments
    b. Reminder of document handling/reviewing protocols
        - Protocol for incoming comments (from municipal coordinators, etc. to you)
        - Protocol for incoming comments (from you to JLWA)
        - Use new SharePoint folders
        - Protocol for tracked changes (from JLWA to you)
    c. Appendix C
        i. Muni participation matrix/ muni participation in general
        ii. Documentation needs
            - Special Districts, Utilities, etc. outreach documentation
            - Circulation of participation expectations and requirements
            - May/June meeting announcements
            - August meeting announcements
            - September/Oct. meeting announcements
            - Notice to neighboring counties, interested parties of draft availability
            - Proof of public notice
            - Other missing materials

d. Main text review, section-by-section
    i. Section 2
    ii. Section 3
    iii. Section 4
    iv. Section 5
        - Public outreach efforts: speaker's bureau, CERT booth info, briefing points for local coordinators, etc.
    v. Section 6
    vi. Section 7
        - Critical facilities RAs to come from JLWA
        - Outstanding fotos?
    vii. Section 8
        - Salem municipal assessment
    viii. Section 9
        - New municipal actions (from munis; JLWA staff)
        - Call logs and non-responsive communities
    ix. Section 10
e. Overview of Appendices
f. Overview of "separate deliverables"

Meeting Notes
9/19/08
SDVR NJ multi-jurisdictional HMPs
Gloucester Co. OEM, 1200 N Delsea Dr., Clayton NJ

[Color-coded action items: County coordinators; JLWA]

IN ATTENDANCE:

- Sam Spino, Camden Co. OEM
- Len Clark, Gloucester Co. OEM
- Jim Manski, Cumberland Co. OEM
- Dave Polk, Salem Co. OEM
- Pat Gorman, NJOEM
- Hal Cohen, JLWA

Scheduling issues

The group determined that the October Steering Committee meeting would cancelled due to conflict with the NJAFM conference and the likelihood that there won't be much to discuss; we'll plan to meet again in November

The next round of county Working Group/ Public Meetings is confirmed for:

- Salem 9/24 7pm
- Camden 10/1 7 pm
- Cumberland 10/2 7pm
- Gloucester 10/2 7:30pm

Grant admin issue

The group discussed the issue of grant administration

Len will email other coordinators re: who he has info from on timekeeping

Hal will check to see if he has benefits calculations from any coordinators besides Len

Municipal participation

The group discussed the issue of municipalities that have yet to participate in developing mitigation actions

Camden, Gloucester, and Salem will continue to pursue municipalities that have yet to participate in the mitigation action plan process ***(ongoing)***

Jim will prepare a letter vouching that all municipalities who created mitigation action plans have fulfilled their responsibilities to the satisfaction of the coordinators – Hal will need to get these back from all coordinators ***no later than 10/3*** (and preferably earlier)

Document review

The group reviewed the entire Committee Draft and discussed outstanding issues related to its finalization for submittal to NJOEM/FEMA

Hal will double-check that we have used the revised FEMA crosswalk – this will be completed ***by 9/26***

Coordinators will supply all missing process and correspondence material for appx C indicated in the handout Hal provided – this should be completed by ***9/29***

Coordinators will send any additions to Table 5.2.2-2 (working group members) – this should be completed by ***9/29***

Coordinators will provide mitigation-type info for Table 7.3.1-7 (or Table 7.3.1-6, depending on the county), mitigated SRL properties – this should be completed by ***9/29***

Coordinators will provide answers to missing info in Tables 8.4.2-1 and others in Section 8.4 – this should be completed by ***9/29***

Hal will check whether analysis related to flood PWs at the end of Section 7.3.1 is just for categories C-G or also for A-B – this will be completed ***by 9/26***

Coordinators will provide answers to missing info in Tables 8.6-1 – this should be completed by ***9/29***

Hal will find out what "Fairfield elevations" refers to in Camden 8.6-1 – this will be completed ***by 9/26***

Hal will get Sam any new foto assignments for Camden – this will be completed ***by 9/26***

Hal will set up action items for Salem related to the municipal survey; note in secs 8, 9

Adoption

The group discussed issues related to adoption and approval of the plan doc

Hal will look into the issue of model adoption resolution language

Hal will check whether the county must adopt before the participating municipalities

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Appendix C (Planning Process) Materials Inventory
September 19, 2008

	Camden	Cumberland	Gloucester	Salem
Committee Meetings				
Kick-off sign-in sheet(s)	X	X	X	X
Kick-off .ppt	X	X	X	X
2/4 SC meeting sign-in	X	X	X	X
2/4 SC meeting notes	X	X	X	X
2/19 SC meeting sign-in	X	X	X	X
2/19 SC meeting notes	X	X	X	X
Draft website	X	X	X	X
Draft schedule	X	X	X	X
Draft accounting stuff	X	X	X	X
Draft monthly report	X	X	X	X
Draft SOW	X	X	X	X
Draft wish list	X	X	X	X
Draft workplan	X	X	X	X
3/18 SC meeting sign-in	X	X	X	X
3/18 SC meeting agenda	X	X	X	X
3/18 sign-in meeting notes	X	X	X	X
Revised schedule	X	X	X	X
CF inventory instructions	X	X	X	X
Force acting sheet	X	X	X	X
Draft HI table	X	X	X	X
4/15 SC meeting sign-in	X	X	X	X
4/15 SC meeting agenda	X	X	X	X
4/15 sign-in meeting notes	X	X	X	X
CF inventory spreadsheet	X	X	X	X
CF inventory instructions	X	X	X	X
Capability survey participation spreadsheet	X	X	X	X
Draft HI table	X	X	X	X
5/20 SC meeting sign-in	X	X	X	X
5/20 SC meeting agenda	X	X	X	X
5/20 sign-in meeting notes	X	X	X	X
Materials provided	X	X	X	X
Dams list	X	X	X	X
May/June WG sign-in		X	X	
May/June WG agenda	X	X	X	X
May/June WG .ppt	X	X	X	X
6/20 SC meeting agenda	X	X	X	X
6/20 sign-in meeting notes	X	X	X	X
Materials provided	X	X	X	X
RA table	X	X	X	X

Southern Delaware Valley Region, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Appendix C (Planning Process) Materials Inventory
September 19, 2008

	Camden	Cumberland	Gloucester	Salem
Correspondence				
Invite letter from OEM	X	X	X	X
LOIs	X	X	X	X
Public notice re May/June meeting (text)	(x)	ok	(x)	
Public notice re May/June mtg (order/release)		ok	ok	(x)
Notice to WG re May/June meeting	(x)		(x)	
Public notice re Aug meeting (text)	(x)	(x)		
Public notice re Aug meeting (order/release)	(x)		(x)	
Notice to WG re Aug meeting	(x)	(x)		
Public notice re Oct meeting (text)	(x)			
Public notice re Oct meeting (order/release)			(x)	
Notice to WG re Oct meeting	(x)		(x)	
Notice to WG re participation reqs.			(x)	
Notice to WG re CF inventory	(x)		(x)	
Notice to WG re data “wish list” requests				
Notice to WG re survey	(x)		(x)	
Notice to WG re municipal outreach	(x)	(x)	(x)	(x)
Notice to WG re plan adoption process			(x)	
Notice to WG re draft	(x)	(x)	(x)	(x)
Notice to interested parties of process				
Interested parties contacted re process (no emails)				
Notice to interested parties re draft		(x)		
Interested parties contacted re draft (no emails)				

	Camden	Cumberland	Gloucester	Salem
Draft strategies	X	X	X	X
8/5 SC meeting agenda	X	X	X	X
8/5 SC meeting notes	X	X	X	X
Doc drafting timeline	X	X	X	X
List of docs in 8/5 review packet	X	X	X	X
Example future growth section & map	X	X	X	X
Structures to foto	X	X	X	X
Revised table 6.4-1	X	X	X	X
Hazmat map	X	X	X	X
Muni outreach/ action plans so far	X	X	X	X
Muni outreach call log	X	X	X	X
Aug WG sign-in	X	X	X	X
Aug WG agenda	X	X	X	X
Aug WG .ppt	X	X	X	X
9/19 SC meeting agenda				
9/19 SC meeting notes				
[9/19 SC meeting hand-outs]				
Sept/Oct WG sign-in				
Sept/Oct WG agenda				
Sept/Oct WG .ppt				
Public				
Website	(x)	(x)	(x)	(x)
Web link	(x)	n/a		
Press release				
May/June PM newspaper public notice (proof)		X	(x)	
May/June PM web public notice				
May/June PM sign-in		X	X	X
May/June PM agenda	X	X	X	X
May/June PM .ppt	X	X	X	X
HM 101	X	X	X	X
Aug PM newspaper public notice (proof)				
Aug PM web public notice	X	X	X	X
Aug PM sign-in	X	X	X	X
Aug PM agenda	X	X	X	X
Aug PM .ppt	X	X	X	X
Sept/Oct PM newspaper public notice (proof)				
Sept/Oct PM web public notice				
Sept/Oct PM sign-in				
Sept/Oct PM agenda				
Sept/Oct PM .ppt				

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group/ Public Meeting Agenda
October 2, 2008

A. Introductions

B. Where we are in the hazard mitigation planning process

C. Review/discuss work in progress: “Committee Draft” Hazard Mitigation Plan

D. Next steps

E. Questions, discussion, public comment

Gloucester County, NJ Multi-Jurisdictional Hazard Mitigation Plan

Working Group/Public Meeting, October 2, 2008

PREPARED FOR:

Gloucester County

Office of Emergency Management

PREPARED BY:

Agenda

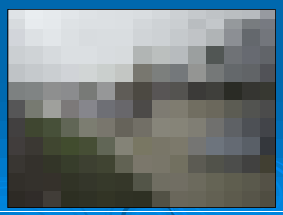
- Introductions
- Where we are in the planning process
- Review/discuss draft Hazard Mitigation Plan
- Next steps
- Questions, discussion, public comment

Introductions

Where We are in the Process

Where We are in the Process: What is "Hazard Mitigation"?

Any measures undertaken to reduce the risks posed by natural and/or manmade hazards on a place and its population.



Where We are in the Process: How is the Plan Developed?

Mitigation planning all boils down to **two basic questions**:

- What hazards present the greatest risk to the County and its citizens?
- What are the most effective ways to reduce those risks?

Where We are in the Process: Plan Development

- ☐ Organize Resources
  - ☐ Build the Planning Team
  - ☐ Data/Document Requests and Review
- ☐ Assess Risks
  - ☐ Hazard Identification
  - ☐ Risk Assessment & Loss Estimation
- ☐ Develop a Mitigation Plan
  - ☐ Capability Assessment
  - ☐ Mitigation Strategies
- ☐ Implement the Plan and Monitor Progress

Where We are in the Process: Plan Development

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  - ☑ Risk Assessment & Loss Estimation
- ☑ Develop a Mitigation Plan
  - ☑ Capability Assessment
  - ☑ Mitigation Strategies
- ☐ Implement the Plan and Monitor Progress

Where We are in the Process: Public Involvement

- Press releases
- Public meetings
- Website postings: www.ccpublicsafety.org/hm/hm_home.htm
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Work in Progress:

"Committee Draft" Hazard Mitigation Plan

Draft HMP: Hazard Identification, Profiling

- 32 Natural and technological hazards considered
- Narrowed to 21 hazards for profiles

Draft HMP: Hazard Identification, Profiling

- Risk assessment for most significant hazards
- *Countywide*
  - Flood
  - High Wind—Straight-line Winds
  - Severe Storm—Winter Weather
  - Earthquake/Geological
  - Dam Failure
  - Levee Failure

Draft HMP:
Hazard Identification, Profiling

- Risk assessment for most significant hazards
- *For selected municipalities*
  - Wildfire

Draft HMP:
Risk Assessment

Flood: FIRM Zones

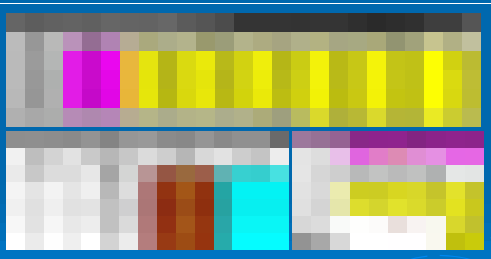
Draft HMP:
Risk Assessment

Flood: RL **Flood: SRL**

Draft HMP:
Risk Assessment

Flood: RL Clusters **Wildfire**

Draft HMP:
Risk Assessment



Earthquake, Wind, Winter Weather, etc.

Draft HMP:
Risk Assessment

Dams

Draft HMP:
Risk Assessment

Draft HMP:
Risk Assessment

Draft HMP:
Risk Assessment

Hazard	PC Risk (100 yr. horizon)
Flood (RL)	$6,253
High Wind—Straight-line Winds	$568
Severe Storm—Winter Weather	$119
Earthquake/Geological	$75
Dam Failure	n/a
Levee Failure	n/a

Draft HMP:
Critical Facilities

- Critical Facilities Inventory by Type:
  - EOCs
  - Data storage facilities
  - Fire/EMS
  - Police stations
  - Emergency shelters
  - Emergency medical care
  - Dams, levees, floodwalls, etc.
  - Power facilities
  - Communications, water, sewer infrastructure
  - Hazmat facilities

Draft HMP:
Critical Facilities

Draft HMP:
Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
  - "All hazards" public education and outreach
  - Public awareness program on local TV
  - Annual workshops related to FEMA grants, targeted to the public and to municipal and other subgrantees
  - Participate in state (NJOEM, NJFS) outreach

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 2: Improve Data Collection, Use, Sharing
  - Develop and maintain relationships with organizations that maintain and store relevant data
  - Coordinate with ongoing efforts to develop and maintain relevant data
  - Undertake site-specific studies related to flood risks
  - Undertake detailed vulnerability assessments of critical facilities in V or VE zones
  - Continuously update RL/SRL lists

Draft HMP: Mitigation Action Plan

- Goal 2: Improve Data Collection, Use, Sharing
  - Participate in state's Emergency Preparedness Conference
  - Develop database of critical facilities, including relevant exposure data
  - Complete site surveys of critical facilities identified as high priorities
  - Various actions to acquire better data for risk assessments

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 3: Improve Capabilities, Coordination, and Opportunities
  - Keep RL/SRL mitigation a high priority and provide technical support
  - Provide grants information to potential subgrantees
  - Increase NFIP and CRS participation
  - Enforcement of floodplain management and integration with zoning, subdivision regs., etc. using local and state tools
  - Explore opportunities for direct county support for mitigation planning/implementation

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 4: Pursue Mitigation Opportunities
  - Develop SRL strategy that will qualify for 90:10 cost share under FEMA SRL program
  - Promote acquisition and elevation of RL/SRL structures
  - Implement local mitigation projects (detailed in following slides)

Draft HMP: Municipal Action Plans

- ☐ Clayton
- ☐ Deptford
- ☐ East Greenwich
- ☐ Elk
- ☐ Franklin
- ☐ Glassboro
- ☐ Greenwich
- ☐ Harrison
- ☐ Logan
- ☐ Mantua
- ☐ Monroe
- ☐ National Park
- ☐ Newfield
- ☐ Paulsboro
- ☐ Pittman
- ☐ (Rowan Univ.)
- ☐ South Harrison
- ☐ Swedesboro
- ☐ Washington
- ☐ Wenonah
- ☐ West Deptford
- ☐ Westville
- ☐ Woodbury
- ☐ Woodbury Heights
- ☐ Woolwich

Draft HMP: Municipal Action Plans

- ☑ Clayton
- ☑ Deptford
- ☐ East Greenwich
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- ☑ Pittman
- ☑ (Rowan Univ.)
- ☑ South Harrison
- ☑ Swedesboro
- ☑ Washington
- ☑ Wenonah
- ☑ West Deptford
- ☐ Westville
- ☑ Woodbury
- ☑ Woodbury Heights
- ☑ Woolwich

Next Steps

Next Steps:
Plan Review and Adoption

- Complete Committee Draft plan now available for comment
- Submission to NJOEM/ FEMA RII early October
- Necessary revisions (?)
- Participating jurisdictions adopt plan
- Participating jurisdictions implement the plan and monitor progress
- Five-year plan update cycle

Questions, Discussion, and Public Comment

C.2 Public Process

On the following pages are copies of documentation for public involvement during the development of the Plan including notice, agendas, sign-in sheets, and presentation materials for the following:

- May 22, 2008 — Website Posting
- May 29, 2008 — Public Meeting
- August 19, 2008 — Public Meeting
- October 2, 2008 — Public Meeting
- October 8, 2008 — Press Release

Southern Delaware Valley Hazard Mitigation

Hazard Mitigation Information

Southern Delaware Valley Hazard Mitigation

General Information

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

General Information

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

WHAT IS HAZARD MITIGATION?

Natural hazards have the potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. While an important aspect of emergency management deals with disaster recovery – those actions that a community must take to repair damages and make itself whole in the wake of a natural disaster – an equally important aspect of emergency management involves hazard mitigation. Hazard mitigation measures are efforts taken before a disaster happens to lessen the impact that future disasters of that type will have on people and property in the community. They are things you do today to be more protected in the future. Hazard mitigation actions taken in advance of a hazard event are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage. With careful selection, hazard mitigation actions can be long-term, cost-effective means of reducing the risk of loss and help create a more disaster-resistant and sustainable community.

WHAT IS A HAZARD MITIGATION PLAN?

A Hazard Mitigation Plan is a well-organized and well-documented evaluation of the hazards that a jurisdiction is susceptible to, and the extent to which these events will occur. Hazard Mitigation Plans identify an area's vulnerability to the effects of the natural hazards typically present in a certain area, as well as the goals, objectives, and actions required for minimizing future loss of life and property damage as a result of hazard events. The primary purpose of mitigation planning is to systematically identify policies, actions, and tools that can be

used to implement those actions.

PURPOSE AND NEED FOR THE PLAN

Hazard mitigation plans are developed BEFORE a disaster strikes. The plans identify community policies, actions, and tools for long-term implementation to reduce risk and potential for future losses. Adopted, implemented and maintained on an ongoing basis, these plans will gradually, but steadily, lessen the impacts associated with hazard events in the Southern Delaware Valley Region.

Under the U.S. Disaster Mitigation Act of 2000 (DMA 2000), as of November 1, 2004 communities that do not have a FEMA-approved hazard mitigation plan in place are no longer eligible for FEMA project grant monies under programs such as the Flood Mitigation Assistance Program (FMA), Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

OUTCOMES: IDENTIFYING MITIGATION PROJECTS AND OTHER BENEFITS

A major focus of this Hazard Mitigation Plan will be to identify effective mitigation projects and realistic implementation mechanisms for them, including identifying potential funding streams. This focus is applicable to projects that may be eligible for federal funding through FEMA grants or other sources, as well as to projects that may not qualify for federal funding but may still be important to a community. This planning process will help lay the groundwork for implementation of both federally fundable and non-federally fundable mitigation projects.

In addition to identifying and scoping effective mitigation projects, a Hazard Mitigation Plan will also assist the counties and municipalities of the South Delaware Valley Region in the following ways:

- Enhanced coordination of hazard mitigation with comprehensive planning and zoning,
- An increased understanding of the nature of the natural hazards the region faces and our exposure to them,
- Development of more sustainable and disaster-resistant communities,
- Eligibility for federal funds for pre-disaster mitigation planning under DMA 2000,
- Partnerships that support planning and mitigation efforts and may offer potential financial savings, including:

reduced flood insurance premiums, broader resources for funding of mitigation projects, and enhanced benefit-cost ratios for U.S. Army Corps of Engineers projects, and
- Reduced long-term impacts and damages to human health and structures, and reduced repair costs.

Proactive mitigation leads to the development of sustainable, cost-effective projects. In contrast, reactive mitigation tends to yield “quick-fix” alternatives that may cost much and accomplish little. Proactive mitigation is also far more cost-effective than paying to clean up and rebuild after disasters happen. Danger to population and damage to property can be reduced if the region evaluates where and how disasters may occur, and takes steps to reduce those risks.

PARTICIPATION

Jurisdictions located within the Southern Delaware Valley Region (which includes Camden, Cumberland, Gloucester, and Salem counties) who wish to be recognized by FEMA as being compliant with the U.S. Disaster Mitigation Act of 2000 (DMA 2000) must either: (a) participate with the counties of the Southern Delaware Valley Region in the multi-jurisdictional plan development process and formally adopt the final plan, or (b) prepare their own hazard mitigation plan.

Elected and appointed government officials, business leaders, volunteers of non-profit organizations, citizens, and other stakeholders have been invited to participate in our four coordinated multi-jurisdictional plan development processes as part of our four county planning committees. If you are interested in participating, please contact your respective county Office of Emergency Management.

Citizens of the Southern Delaware Valley Region will have the opportunity to participate by attendance at the various public meetings. The dates of these meeting will be posted on the websites of the four participating counties.

Active participation in the process is the only way a jurisdiction can be seen in FEMA's eyes as a 'participating jurisdiction' that has met the requirements of DMA 2000 and is therefore eligible to apply for Federal funds for hazard mitigation projects. Participation includes attending meetings, providing feedback and reaching out to the public and other key stakeholders in the community, and adopting the final plan.

PROCESS OVERVIEW

The hazard mitigation planning processes will be conducted over the course of approximately one year, beginning in February, 2008. Key steps of the process include:

- Research a full range of natural hazard events.
- Identify the subset of significant hazards; these will be the focus of the plan.
- Identify the location and extent of hazard areas.
- Identify assets located within hazard areas.
- Characterize existing and potential future assets at risk by analyzing land uses and development trends
- Assess vulnerabilities to the identified hazards.
- Identify local, state, and Federal capabilities that support hazard mitigation.
- Develop a mitigation strategy by evaluating and prioritizing goals, objectives, and hazard mitigation actions.
- Adopt the plan.
- Implement the Plan and monitor its progress.

While natural disasters cannot be prevented from occurring, the continued implementation of our hazard mitigation plan over the long-term will gradually, but steadily, lessen the impacts associated with hazard events in our region.

Southern Delaware Valley Hazard Mitigation

Meeting Schedule

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

For the meeting schedules of each of the participating counties, please refer to the county websites:

Download Meeting Materials

Work Group PowerPoint
Work Group Handouts
WorkGroup PowerPoint as an Adobe PDF File
Work Group Handout as an Adobe PDF File

Camden

County Working Group/Public Meeting

When: August 19th @ 7:00 PM
Where: Camden County: DPW; 2311 Egg Harbor Rd., Bldg. 1; Lindenwold

Cumberland

County Working Group/Public Meeting

When: August 21st @ 7:30 PM
Where: Cumberland County EOC, 637 Bridgeton Avenue, Bridgeton, NJ 08302

Gloucester

County Working Group/Public Meeting

When: August 19th @ 7:00 PM
Where: Gloucester County Fire Academy; 200 Shady Lane, Clarksboro, NJ

Salem

County Working Group/Public Meeting

When: August 21st @ 7:30 PM
Where: Cumberland County EOC,
637 Bridgeton Avenue, Bridgeton, NJ
08302

Southern Delaware Valley Hazard Mitigation

The Draft Plan

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

The Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Planning processes are currently underway for the four participating counties. Draft Plans are scheduled for release in fall 2008. We thank you for your interest, and invite you to return to this web page to review the Draft Plans as they are updated.

Camden County Plan

September 2008: Camden County Draft Plan

September 2008: Camden County Draft Appendices

Cumberland County Plan

September 2008: Cumberland County Draft Plan

September 2008: Cumberland County Draft Appendices

Gloucester County Plan

September 2008: Gloucester County Draft Plan

September 2008: Gloucester County Draft Appendices

Salem County Plan

September 2008: Salem County Draft Plan

September 2008: Salem County Draft Appendices

Southern Delaware Valley Hazard Mitigation

Useful Links

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

New Jersey State Police – Office of Emergency Management

- Home Page

Federal Emergency Management Agency

- Home Page
- Hazard Mitigation Division
- Disaster Mitigation Act of 2000
- Interim Final Rule, Feb. 2002
- Interim Final Rule, Oct. 2002
- Mitigation Planning Guidance
- How-To Guides & Other Publications
- FEMA Approved Mitigation Plans
- Mitigation Grant Programs
- Hazard Information

Citizen Questionnaire_Southern Delaware Valley Region, NJ Hazard Mitigation Plan

Exit this survey

NATURAL HAZARD MITIGATION QUESTIONNAIRE

	9 %

This questionnaire is designed to gauge the level of knowledge local citizens have about issues related to natural disasters. The information you provide will help coordinate activities to reduce the risk of injury or property damage in the future.

A regional planning partnership of counties, municipalities, agencies and stakeholders is currently creating a Hazard Mitigation Plan to address natural hazards the Southern Delaware Valley Region (Camden, Cumberland, Gloucester, and Salem counties). In order to identify and plan for future natural disasters, we need assistance from the residents of the four-county region.

This survey will take less than 15 minutes to complete. It consists of 28 questions designed to help identify risks from and ways best to plan for natural disasters in our communities.

The term “mitigation” means to make something less harsh or severe. Hazard mitigation activities are actions that can be taken to protect people and property from natural hazard events such as floods, severe storms and excessive temperatures.

Next

Southern Delaware Valley Hazard Mitigation

General Information

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

County Planning Committees

Each of the four counties maintains its own county planning committee for purposes of providing leadership and direction for the creation of each county's hazard mitigation plan. The planning committees are generally comprised of emergency managers of the municipalities within each county.

Participating municipalities in the county hazard mitigation plans are responsible for:

- Coordinating and facilitating local efforts
- Attending meetings
- Providing information and feedback
- Involving the public and community stakeholders in the planning process
- Assessing mitigation alternatives
- Selecting a course of action to be followed for their communities
- Adopting the plan
- Implementing the plan and monitoring its progress

Each county office of emergency management has also designated a representative to serve on a four-county steering committee that helps coordinate schedules, resources, and planning processes for the four Southern Delaware Valley Region planning efforts.

Consulting Team

James Lee Witt Associates (JLWA), part of the Global Options

Group, is the lead consultant for this project.

Founded in 2001, JLWA is a leading public safety and crisis management consulting firm based in Washington, D.C., with regional offices in Atlanta, Chicago, Little Rock, Sacramento and New Jersey. Nationwide, Global Options, Inc. has over 500 employees who are engaged on a wide range of security services and disaster-related efforts.

JLWA has unrivaled experience and hands-on knowledge of public safety, security, communications, and policy issues; and advises private sector businesses, universities, utilities, hospitals, and governments, including governors, members of congress, administration officials, and state and local elected officials, on various matters regarding federal, state and local emergency management, policies and programs. The JLWA team also has extensive experience developing vulnerability and risk assessments, hazard mitigation plans and mitigation projects for a wide variety of entities, including states and communities, universities, and private companies.

JLWA builds upon James Lee Witt's more than 25 years of leadership and experience in public service, including eight years as the Director of the Federal Emergency Management Agency (FEMA). During that period, Mr. Witt directed response and recovery operations for more than 350 disasters in all 50 states. In addition, Mr. Witt focused FEMA on programs to support hazard mitigation and emergency preparedness for local communities. The Disaster Mitigation Act of 2000, providing sweeping changes to the Stafford Act and the impetus for hazard mitigation planning in thousands of US communities, was also conceived and enacted under his guidance.

Vissering Pardue and Associates, Inc. (VPA) is providing consultation regarding risk assessment processes and benefit-cost analysis for development of the mitigation strategy. VPA was founded in 2006 as a consulting company specializing in hazard mitigation, program support and risk assessment. The firm operates from the DC metropolitan area but offers specialized services to federal, state, and local governments nationwide, as well as to engineering and planning firms. Prior to forming the company, both principals had extensive experience at FEMA's national headquarters during the 1990s –

a key development period for the mitigation grant programs and with all aspects of mitigation planning.

Jeffrey S. Ward & Associates, Inc. (JSW) is providing consultation regarding hazard mitigation project implementation. JSW is a firm specializing in mitigation project evaluation, grant application development, and project implementation. The company, based on northern Virginia, was formed in 2001 and, since that time has been comprised of two principals who between them have over 20 years of mitigation experience under FEMA mitigation programs.

Princeton Hydro, Inc. (PHI) will be providing locally-based technical support for geographic information systems (GIS) and data management on the project. PHI has offices in Hunterdon County and Camden counties, New Jersey. Princeton Hydro has worked with a variety of state, municipal and other local partners throughout the State, including Bergen, Camden, Mercer, Monmouth and Somerset counties. PHI's GSI staff use the latest software and have degrees in geography. Employing a number of GIS interactive tools, PHI's clients can utilize data and interpretation of geographic features to make informed decisions regarding land use planning and the conservation of natural resources.

CMX, Inc. is providing locally-based technical support for civil engineering and hydrologic analyses to support the identification and documentation of flood-related hazard mitigation projects. CMX is a national engineering and consulting firm headquartered in Manalapan, New Jersey dedicated to providing full-service solutions for complex engineering and design projects. The firm draws upon more than 1,100 experienced professionals located in offices in New Jersey, New York, Pennsylvania, Maryland and elsewhere. CMX offers a wide variety of hydrologic, hydraulic and ecosystem engineering and permitting services. CMX has extensive experience working with New Jersey counties and communities and relevant experience for the engineering related aspects of flood mitigation throughout the mid-Atlantic area.

These firms have significant experience working together on New Jersey hazard mitigation planning projects. VPA, JSW, and

Princeton Hydro are currently also teamed on hazard plans for the State of New Jersey and the City of Trenton; additionally, VPA, JSW, and Princeton Hydro are teamed with JLWA on hazard plans in Union and Middlesex countie

Southern Delaware Valley Hazard Mitigation

Participating Jurisdictions

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

All 90 municipalities in the four Southern Delaware Valley Region Counties (Camden, Cumberland, Gloucester, and Salem) are represented by one or more municipal official.

Southern Delaware Valley Region Municipalities (by County)

Camden

Audubon Borough
Audubon Park Borough
Barrington Borough
Bellmawr Borough
Berlin Borough
Berlin Township
Brooklawn Borough
Camden City
Cherry Hill Township
Chesilhurst Borough
Clementon Borough
Collingswood Borough
Gibbsboro Borough
Gloucester City
Gloucester Township
Haddon Heights Borough
Haddon Township
Haddonfield Borough
Hi-Nella Borough
Laurel Springs Borough
Lawnside Borough
Lindenwold Borough
Magnolia Borough
Merchantville Borough
Mount Ephraim Borough
Oaklyn Borough

Pennsauken Township
Pine Hill Borough
Pine Valley Borough
Runnemede Borough
Somerdale Borough
Stratford Borough
Tavistock Borough
Voorhees Township
Waterford Township
Winslow Township
Woodlynne Borough

Cumberland

Bridgeton City
Commercial Township
Deerfield Township
Downe Township
Fairfield Township
Greenwich Township
Hopewell Township
Lawrence Township
Maurice River Township
Millville City
Shiloh Borough
Stow Creek Township
Upper Deerfield Township
Vineland City

Gloucester

Clayton Borough
Deptford Township
East Greenwich Township
Elk Township
Franklin Township
Glassboro Borough
Greenwich Township
Harrison Township
Logan Township
Mantua Township
Monroe Township
National Park Borough
Newfield Borough
Paulsboro Borough
Pitman Borough
South Harrison Township
Swedesboro Borough
Washington Township
Wenonah Borough

West Deptford Township
Westville Borough
Woodbury City
Woodbury Heights Borough
Woolwich Township

Salem

Alloway Township
Carneys Point Township
Elmer Borough
Elsinboro Township
Lower Alloways Creek Township
Mannington Township
Oldmans Township
Penns Grove Borough
Pennsville Township
Pilesgrove Township
Pittsgrove Township
Quinton Township
Salem City
Upper Pittsgrove Township
Woodstown Borough

Southern Delaware Valley Hazard Mitigation

Contact Information

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

Thank you for your interest! For questions or other feedback, please contact:

Camden County Office of Emergency Management/ Department of Public Safety
attn: Sam Spino
Charles J. DePalma Complex
2311 Egg Harbor Road
Lindewold, New Jersey 08021
(856) 783-4808 ext. 5202
spino@camdencounty.com

Gloucester County Office of Emergency Management
attn: Len Clark
1200 North Delsea Drive
Clayton, NJ 08312
(856) 307-7100
leclark@co.gloucester.nj.us

Salem County Office of Emergency Management
attn: David Polk
135 Cemetery Road
Woodstown, NJ 08098
(856) 769-2900 ext. 4113
dpolk@salemcountynj.gov

Cumberland County Office of Emergency Management
Attn: James Manski
637 Bridgeton Avenue
Bridgeton, NJ 08302
(856) 455-8770 ext. 363
jamesma@co.cumberland.nj.us

Contact municipal (local) PDM Coordinators in Cumberland County

Southern Delaware Valley Hazard Mitigation

Press Releases

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

Cumberland Public Meeting Notice - August 21st, 2008

AFFIDAVIT OF PUBLICATION

State of New Jersey
ss:
Gloucester County

PUBLIC NOTICE

PUBLIC MEETING NOTICE ON GLOUCESTER COUNTY HAZARD MITIGATION PLAN

Please join the Gloucester County, NJ Hazard Mitigation Working Group to learn about and review draft materials related to hazard identification and risk assessment, as part of the development of the County's hazard Mitigation Plan.

The meeting will be held on May 29, 2008 at 7:30 pm, at the Gloucester County Fire Academy, 200 Shady Lane, Clarksboro.

Members of the consultant planning team and the County Working Group will be present to answer questions, receive public input and information, and address public commentary.

FOR MORE INFORMATION, PLEASE CALL THE GLOUCESTER COUNTY OFFICE OF EMERGENCY MANAGEMENT 856-307-7156, E-MAIL leclark@co.gloucester.n|.us.

Debra E. Press-Costello, Deputy Clerk
Board of Chosen Freeholders County of Gloucester

Cost: $30.80

(2515646)5/11-11

Frank Gargano, being duly sworn, on his oath, says he is an agent of the South Jersey Newspapers Co., publishers of the *"Gloucester County Times"*, a newspaper printed and published at *Woodbury*, State and County aforesaid, and that a notice of which the annexed is a true copy, was published in said newspaper for a period of _ L_ *time(s)*, once each week, successively commencing on the ' f day of

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CYNTHMhJ.

Sworn to **and wbstritai taton**
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NOTARY PUBLIC OF NEW JERSEY % Commto^on Expires Mey 12,2011

AFFIDAVIT OF PUBLICATION

State qf New Jersey
ss:

PUBLIC NOTICE

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Debra E. Press-Costello, Deputy Clerk
Board of Chosen Freeholders County of Gloucester

Cost: $28.70

(2515645) 5/4-lt

Frank Gargano, being duly sworn, on his oath, says he is an agent of the South Jersey Newspapers Co., publishers of the *"Gloucester County Times"*, a newspaper printed and published at *Woodbury*, State and County aforesaid, and that a notice of which the annexed is a true copy, was published in said newspaper for a period of / *time(s)*, once each week, 'successively coaimencmg on the *H* day of

jWlfa 3,00ft ~%nd continuing

NOTARY PUBLIC OF NEW JERSEY
i Expires May 12,2011

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group/ Public Meeting Agenda
May 29, 2008

A. Welcome
B. Introductions
C. Municipal Participation and Eligibility
D. Hazard Mitigation Planning Overview
    1. What is hazard mitigation?
    2. Mitigation projects and activities
    3. Hazard Mitigation Plans
    4. The planning process
E. Where We are in the Process
    1. Plan Development
    2. Capability Assessment
    3. Public Involvement
F. Work in Progress
    1. Hazard identification and ranking
    2. Risk assessment methodology
    3. Risk assessment results to date
G. Next Steps

Presentation

H. Q&A
I. Discussion and Approval of Hazard Identification and Ranking
J. Prioritization of Critical Facilities
K. Validation of Preliminary Risk Assessment Outputs

HAZARD MITIGATION 101

Introduction to Hazard Mitigation Planning

What is a "hazard"? A hazard is something that can cause loss of life, injuries, property loss, and/or economic hardship. Examples of natural hazards include flood, high winds due to hurricanes and tropical storms, and earthquakes.

What is "hazard mitigation"? When people think about "emergency management" in response to hazards, many think first about response and recovery. But hazard mitigation is an equally important aspect of emergency management. *Hazard mitigation measures are efforts taken before a disaster happens to lessen the impact of future disasters.*

What is a "hazard mitigation plan"? A Hazard Mitigation Plan is a process and a document that evaluates the hazards to which a jurisdiction is susceptible by examining the area's vulnerability and risk. The plans then identify the actions required to minimize future losses. *Hazard mitigation plans are developed before a disaster strikes.*

Under the U.S. Disaster Mitigation Act of 2000 (DMA 2000), communities must have a FEMA-approved Hazard Mitigation Plan to be eligible for certain FEMA grants.

What are the benefits of doing a hazard mitigation plan? A major focus of this Hazard Mitigation Plan will be identifying effective mitigation projects and realistic implementation mechanisms, including potential funding sources (both federal and non-federal sources).

In addition to identifying effective projects, a Hazard Mitigation Plan will also enhance coordination between hazard mitigation with comprehensive planning and zoning.

Proactive mitigation through hazard mitigation planning leads to the development of sustainable, cost-effective projects. In contrast, reactive mitigation in the wake of a disaster can yield "quick-fix" projects that may cost much and accomplish little. Proactive mitigation is also more cost-effective than paying for clean-up and rebuilding after disasters.

Hazard Mitigation Process Overview

The hazard mitigation planning processes will be conducted over the course of approximately one year, which began in February, 2008. Key steps of the process include:

1) Research a full range of natural hazard events (now complete).
2) Identify the subset of hazards that will be the focus of the plan (now in draft phase).
3) Identify the location and extent of hazard areas (now in draft phase).
4) Identify assets within hazard areas (now in research phase).
5) Characterize existing and potential future assets at risk by analyzing land uses and development trends (now in research phase).
6) Assess vulnerabilities to the identified hazards (now in research phase).

7) Identify local, state, and Federal capabilities that support hazard mitigation (now in research phase).
8) Develop a mitigation action plan by evaluating and prioritizing goals, objectives, and hazard mitigation actions (future phase).
9) Adopt the plan (future phase).
10) Implement the Plan and monitor its progress (future phase).

Leadership and Participation for Southern Delaware Valley Hazard Mitigation Plans

Regional level: Each county Office of Emergency Management has designated a representative to serve on a four-county Steering Committee that helps coordinate schedules, resources, and planning processes for the four county planning efforts.

County level: Each of the four counties maintains its own county Working Committee to provide leadership in creating each county's hazard mitigation plan. The Working Committees are generally comprised of emergency managers of the municipalities.

Elected and appointed government officials, business and non-profit leaders, citizens, and other stakeholders have been invited to participate in the plan development processes.

The DMA 2000 requires active participation in the process for a municipality to be considered a "participating jurisdiction," and therefore to be eligible for federal hazard mitigation funds. Participation includes attending meetings, providing feedback and reaching out to the public and other key stakeholders in the community, and adopting the final plan.

Citizen involvement: Citizens of the Southern Delaware Valley Region will have the opportunity to participate by attendance at the various public meetings.

For meeting dates, to take a citizen survey about mitigation, or to find and other resources about hazard mitigation planning, log onto: www.ccpublicsafety.org/hm/hm_home.htm.

For Questions or to Provide Feedback, Please Contact:

Camden County Office of Emergency Management Sam Spino (856) 783-4808 spino@camdencounty.com	*Cumberland County* Office of Emergency Management James Manski (856) 455-8770 jamesma@co.cumberland.nj.us
Gloucester County Office of Emergency Management Len Clark (856) 307-7100 leclark@co.gloucester.nj.us	*Salem County* Office of Emergency Management David Polk (856) 769-2900 dpolk@salemcountynj.gov

Gloucester County, NJ Multi-Jurisdictional Hazard Mitigation Plan

Working Group/ Public Meeting May 29, 2008

PREPARED FOR:

Gloucester County

Dept. of Emergency Response

Agenda

- Introductions
- Municipal participation
- Hazard mitigation planning overview
- Where we are in the process
- Work in progress
- Next steps
- Questions and discussion

Introductions

Introductions

- County Working Group
- Special Districts and Organizations
- Other Stakeholders
- James Lee Witt Associates

Introductions

- Name
- Position
- Organization
- Previous Experience in Hazard Mitigation Planning or Implementation?

Municipal Participation

Municipal Participation: Eligibility Requirements

- Responding to data and document requests
- On-line Capability Assessment
- Completing Critical Facility inventories and prioritization
- Meeting attendance
- Plan adoption (at the end of the process)

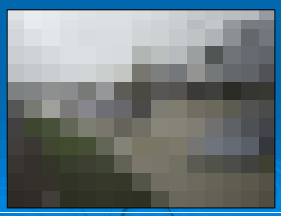
Municipal Participation: Eligibility Implications

- Pre-disaster hazard mitigation grant programs
- Post-disaster public assistance and hazard mitigation grant programs

Hazard Mitigation Planning Overview

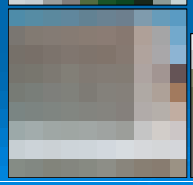
Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

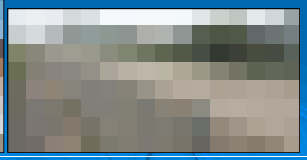
Any measures undertaken to reduce the risks posed by natural and/or manmade hazards on a place and its population.



Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

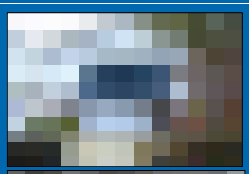
Hazard mitigation measures can include **structural projects** like levees, dams, or safe rooms.

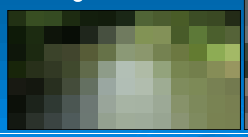


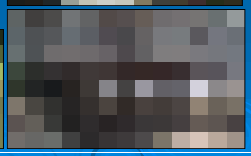


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

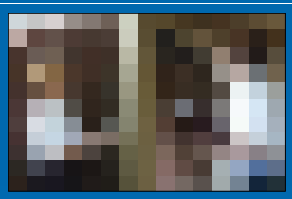
Also, **non-structural projects** like acquisition, elevation, retrofit of buildings, or vegetation management…





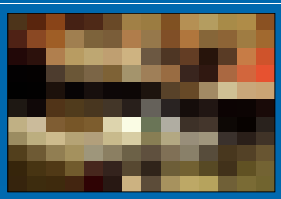


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…regulatory practices like enacting or enforcing building codes, permits, or land use policies…

Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…or training and educational programs for communities and local agencies.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Soft" mitigation projects include mitigation activities such as:

- building code enforcement
- land development regulations
- public education
- studies and plans
- etc.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Hard" mitigation projects or "property protection" construction activities:

- acquisition / elevation / mitigation reconstruction of structures
- retrofits for high wind loads such as installing hurricane shutters
- improving drainage
- etc.

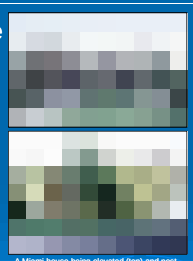
Hazard Mitigation Planning Overview: Acquisition

- Most cost-effective mitigation measure.
- Permanently removes vulnerable property.
- Structure: demolished or relocated; land: open space in perpetuity.
- Requires willing sellers and communities.

Source: Missouri Buyout Program 2002

Hazard Mitigation Planning Overview: Elevation

- Raising a structure above Base Flood Elevation.
- Building size, structural integrity, and type of foundation must be considered.
- Different types of elevation appropriate depending on the structure.



A Miami house being elevated (top) and post-elevation (bottom)
Source: FEMA, *Above the Flood*, 2000

Hazard Mitigation Planning Overview: Mitigation Reconstruction

- Pilot program funded under Disaster Declarations 1603 and 1607 (Hurricanes Katrina and Rita)
- If acquisition and elevation are not feasible then a structure may be demolished and reconstructed at the same location.

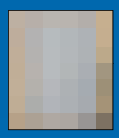
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

Potential projects for civic buildings, health care facilities, utilities, police stations, fire stations, EOCs, jails, schools:

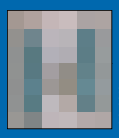
- Shutters/ impact resistant glass in windows
- Strengthen doors
- Hurricane straps/ clips to strengthen roof
- Bolt walls to foundation
- Bury utility lines underground
- Elevate the heating/ventilating/cooling equip.

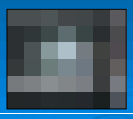
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

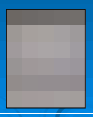
- Install shutters or impact resistant glass on windows


Accordion Shutters


Roll-Down Shutters


Colonial Shutters


Impact Resistant Glass


Corrugated Metal Panel

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Strengthen the doors.

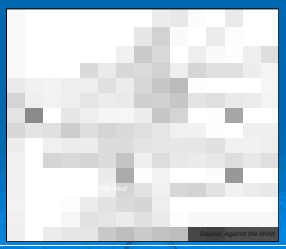

Source: Against the Wind

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Install hurricane straps and clips to strengthen roof.

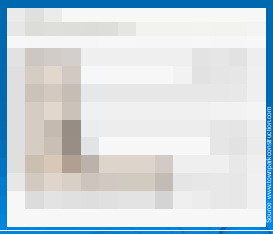

Source: Against the Wind


Source: The Advocate


Source: Against the Wind

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Bolt walls to foundation.


Source: www.homeadvisor.com

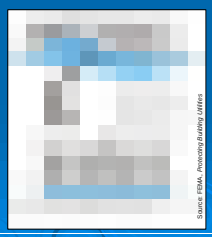
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Relocate utility lines underground.

Fallen utility lines after Wilma. Source: www.gaimie.com

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Elevate the heating, ventilating and cooling (HVAC) equipment, such as furnace and hot water heater.



Source: FEMA, Protecting Building Utilities

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

Potential Projects for pump stations, water control facilities, water treatment and delivery systems, power generation facilities, sewage collection and treatment facilities:

- Install backflow valves
- Elevate the generators and pumps
- Anchor fuel tanks
- Eliminate infiltration problems with underground utility systems

Hazard Mitigation Planning Overview: Drainage Improvements

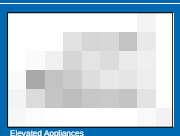
- Creating detention/ retention ponds and reservoirs
- Building floodwalls and diversions
- Constructing storm sewers and increasing culvert capacity
- Maintenance is not an eligible project

Detention Pond

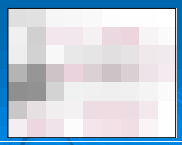
Culvert

Hazard Mitigation Planning Overview: Wet Floodproofing

- Modifying uninhabited portions of a structure to allow water in without significant damage
- Water-resistant materials
- Limited use: not practical for structures with living space at ground level, and does not mitigate high velocity floods



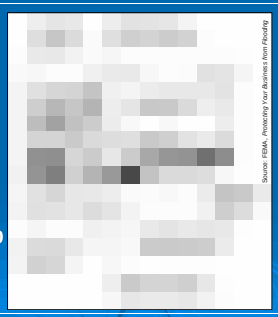
Elevated Appliances
source: www.louisianafloods.org



From www.louisianafloods.org

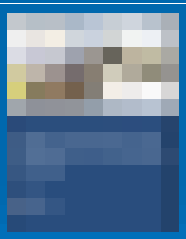
Hazard Mitigation Planning Overview: Dry Floodproofing

- Structure made watertight below vulnerable areas
- Walls sealed and openings waterproofed
- Useful vs. brief floods, <3 ft deep
- Ineffective vs. fast waters



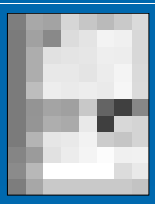
Source: FEMA, Protecting Your Business from Flooding

Hazard Mitigation Planning Overview: Community Shelters



- A structure built to withstand extreme winds and flying debris from tornadoes, hurricanes, and other storms that is accessible to the public.
- Guidelines can be found in FEMA 361.
- The shelter cannot be used for anything else.

Hazard Mitigation Planning Overview: Safe Rooms



- Built onsite or manufactured.
- In new or existing homes.
- Need adequate ventilation.
- Anchored to the foundation and structurally isolated from the main structure.
- First floor, basement, or outside.
- See FEMA Publication 320

Hazard Mitigation Planning Overview: 5% Initiative Mitigation Projects

Projects that are eligible for funding can include new, unproven mitigation techniques and technologies where benefits are not proven or not clearly measurable, such as:

- Generators; or
- Disaster warning equipment and systems.

Hazard Mitigation Planning Overview: What is a "Hazard Mitigation Plan"?

- **Hazard Mitigation Plan**:
  A plan to reduce a community's risk and exposure to disasters

  … which is different from an …

- **Emergency Operations Plan** (EOP):
  A plan to guide a community's response to an emergency or disaster

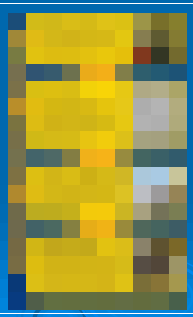
Hazard Mitigation Planning Overview: What is a "Hazard Mitigation Plan"?

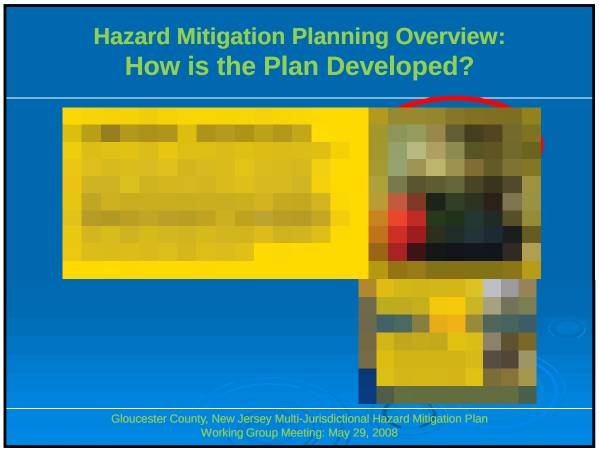
- A Hazard Mitigation Plan is typically written before hazard events occur (**pre-disaster**)
- Hazard mitigation projects can be implemented either before or after a disaster (**pre-disaster** or **post-disaster**).

Hazard Mitigation Planning Overview: How is the Plan Developed?

There is a lot of jargon that is used to describe the planning process.

This graphic shows the process recommended by FEMA.





Hazard Mitigation Planning Overview: How is the Plan Developed?

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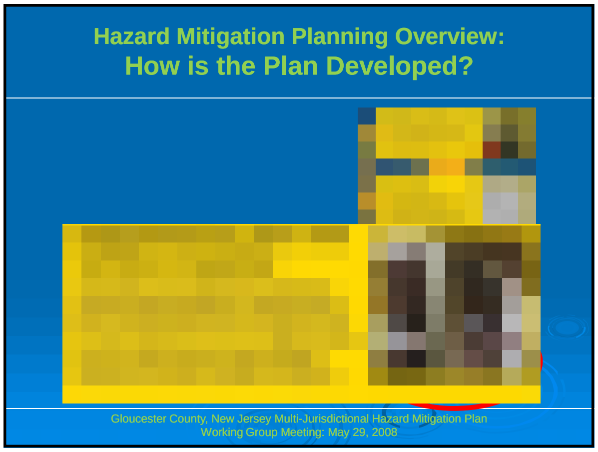
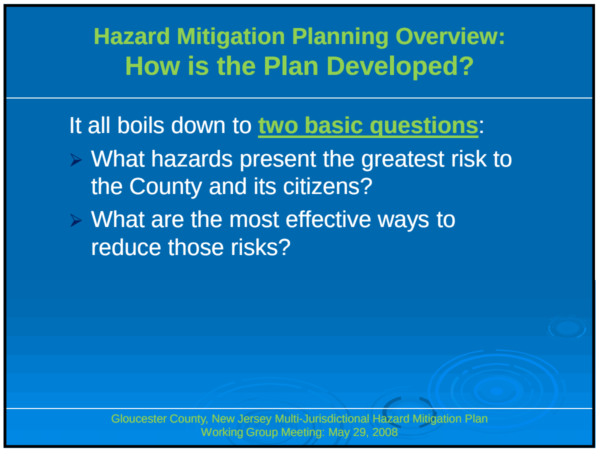


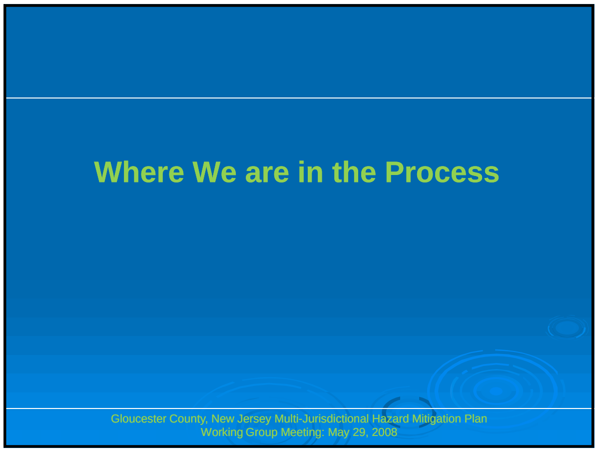
Hazard Mitigation Planning Overview: How is the Plan Developed?



Hazard Mitigation Planning Overview: How is the Plan Developed?

It all boils down to <u>two basic questions</u>:

- What hazards present the greatest risk to the County and its citizens?
- What are the most effective ways to reduce those risks?



Where We are in the Process

Where We are in the Process: Plan Development

Where We are in the Process: Plan Development

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Where We are in the Process: Plan Development

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  - Capability Assessment
  - Mitigation Strategies
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Where We are in the Process: Public Involvement

- Press releases
- Public meetings
- Website postings: www.ccpublicsafety.org/hm/hm_home.htm
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Work in Progress

Work in Progress: Hazard Identification

Hazard Identification and Ranking

- Table 6.3-1 (Hazard Identification)
- Table 6.4-1 (Hazard Ranking)

These tables have been reviewed by the Steering Committee, but they need to be reviewed and validated by the Local Coordinators

Work in Progress: Hazard Identification

- Aircraft incidents
- Air pollution
- Civil disturbance
- Crime
- Dam failure
- Drought
- Earthquake
- Economic crisis
- Erosion
- Terrorism
- Extreme temp. (cold/heat)
- Flood
- Hail
- Hazmat (fixed/transport)
- High wind (hurricanes, etc.)
- High wind (tornado)
- Ice storm
- Landslide
- Levee failure
- Lightning
- Losses (crops/fishing)
- Pandemic disease
- Radiological incident
- Railroad incidents
- Storm surge
- Utility Failure
- Urban Fire
- Wildfire
- Winter weather

Work in Progress: Hazard Identification

- ~~Aircraft incidents~~
- ~~Air pollution~~
- ~~Civil disturbance~~
- ~~Crime~~
- Dam failure
- Drought
- Earthquake
- ~~Economic crisis~~
- Erosion
- ~~Terrorism~~
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- ~~Pandemic disease~~
- ~~Radiological incident~~
- ~~Railroad incidents~~
- Storm surge
- ~~Utility Failure~~
- ~~Urban Fire~~
- Wildfire
- Winter weather

Work in Progress: Hazard Ranking

- ~~Aircraft incidents~~
- ~~Air pollution~~
- ~~Civil disturbance~~
- ~~Crime~~
- **Dam failure**
- ~~Drought~~
- **Earthquake**
- ~~Economic crisis~~
- ~~Erosion~~
- ~~Terrorism~~
- ~~Extreme temp. (cold/heat)~~
- **Flood**
- ~~Hail~~
- ~~Hazmat (fixed/transport)~~
- **High wind (hurricanes, etc.)**
- ~~High wind (tornado)~~
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- ~~Landslide~~
- **Levee failure**
- ~~Lightning~~
- ~~Losses (crops/fishing)~~
- ~~Pandemic disease~~
- ~~Radiological incident~~
- ~~Railroad incidents~~
- ~~Storm surge~~
- ~~Utility Failure~~
- ~~Urban Fire~~
- ~~Wildfire~~
- **Winter weather**

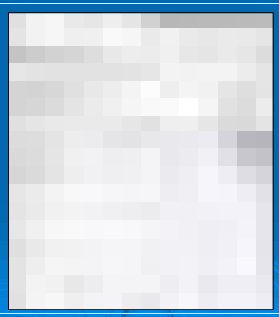
Work in Progress: Risk Assessment

The risk of **flood** is examined in several ways including:

- Exposure to predictable flood areas per FEMA FIRM maps

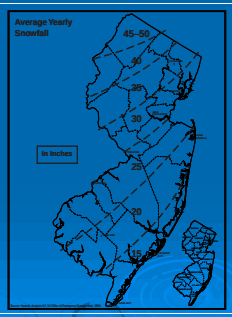
Work in Progress: Risk Assessment

- Repetitive loss properties per records of FEMA's National Flood Insurance Program.



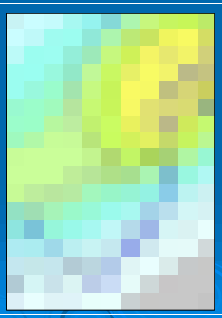
Work in Progress: Risk Assessment

Other natural hazards, like **winter storms**, are assessed in terms of exposure to events of predictable magnitudes



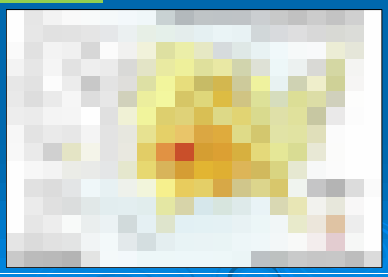
Work in Progress:
Risk Assessment

This approach is also used for **earthquakes**…



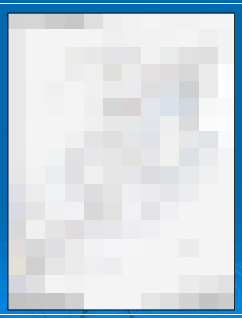
Work in Progress:
Risk Assessment

…and **high winds**



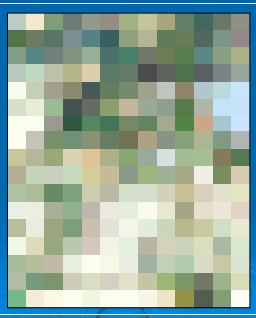
Work in Progress:
Risk Assessment

The risk of a manmade hazard like **dam failure** is assessed in terms of exposure of people and property



Work in Progress:
Risk Assessment

The risk of a technological hazard like **hazmat releases** is assessed in terms of exposure from fixed sites and transportation routes



Next Steps

Next Steps:
Complete Risk Assessment

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

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  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps:
Complete Risk Assessment

- Complete the Risk Assessment
- Critical Facility prioritization and data acquisition

Next Steps:
Capability Assessment

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
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Capability Assessment

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  - Capability Assessment
  - Mitigation Strategies
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Where We are in the Process:
Capability Assessment

- Survey of municipal emergency managers
- Survey of other municipal officials with mitigation responsibilities or knowledge
- Survey of county emergency managers and other county officials
- Full assessment of federal, state, and local funding sources
- **All feeds directly into the mitigation strategies and actions**

Next Steps:
Mitigation Plan

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps: Mitigation Plan

- Organize Resources
  - Build the Planning Team
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- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
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  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Next Steps: Mitigation Plan

- Draft Goals and Objectives
- Draft Mitigation Action Plan (by municipality)

Next Steps: Meetings

- Mitigation Goals, Objectives & Actions Review
  - Working Group Meeting: Mid-August
  - Public Meeting: Mid-August
- Plan Document Review
  - Working Group Meeting: Sept./Oct.
  - Public Meeting: Sept./Oct.

Next Steps: Staying in the Loop

- Watch the Hazard Mitigation Plan website: www.ccpublicsafety.org/hm/hm_home.htm
- Leave your email on the sign-up sheet
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Questions and Discussion

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group/ Public Meeting Agenda
August 19, 2008

A. Introductions
B. Municipal participation
C. Where we are in the hazard mitigation planning process
D. Review/discuss work in progress (mitigation action plan)
E. Next steps
F. Questions and discussion
G. Develop action plans with municipalities that do not yet have them

Gloucester County, NJ Multi-Jurisdictional Hazard Mitigation Plan

Working Group/Public Meeting, August 19, 2008

PREPARED FOR:

Gloucester County

Office of Emergency Management

PREPARED BY:

Agenda

- Introductions
- Municipal participation
- Where we are in the planning process
- Review/discuss work in progress (mitigation action plan)
- Next steps
- Questions and discussion
- *Develop municipal action plans, as needed*

Introduction

Municipal Participation

Municipal Participation: Eligibility Requirements

- Responding to data and document requests, including <u>generating mitigation actions</u>
- On-line Capability Assessment
- Completing Critical Facility inventories and prioritization
- Meeting attendance
- Plan adoption (at the end of the process)

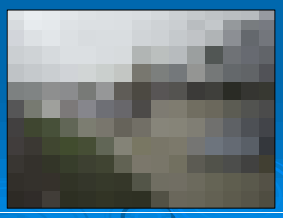
Municipal Participation: Eligibility Implications

- Pre-disaster hazard mitigation grant programs
- Post-disaster public assistance and hazard mitigation grant programs

Where We are in the Process

Where We are in the Process: What is "Hazard Mitigation"?

Any measures undertaken to reduce the risks posed by natural and/or manmade hazards on a place and its population.



Where We are in the Process: How is the Plan Developed?

Mitigation planning all boils down to **two basic questions**:

- What hazards present the greatest risk to the County and its citizens?
- What are the most effective ways to reduce those risks?

Where We are in the Process: Plan Development

- Organize Resources
  - Build the Planning Team
  - Data/Document Requests and Review
- Assess Risks
  - Hazard Identification
  - Risk Assessment & Loss Estimation
- Develop a Mitigation Plan
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- Develop a Mitigation Plan
  - Capability Assessment
  - Mitigation Strategies
- Implement the Plan and Monitor Progress

Where We are in the Process: Public Involvement

- Press releases
- Public meetings
- Website postings: www.ccpublicsafety.org/hm/hm_home.htm
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Work in Progress: Mitigation Action Plan

Mitigation Action Plan: Goals

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 1: Education/Outreach

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 1: Education/Outreach

- Goal 1: Improve Education and Outreach
  - "All hazards" public education and outreach
  - Public awareness program on local TV
  - Annual workshops related to FEMA grants, targeted to the public and to municipal and other subgrantees
  - Participate in state (NJOEM, NJFS) outreach

Mitigation Action Plan: Goal 2: Improve Data

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 2: Improve Data

- Goal 2: Improve Data Collection, Use, Sharing
  - Develop and maintain relationships with organizations that maintain and store relevant data
  - Coordinate with ongoing efforts to develop and maintain relevant data
  - Undertake site-specific studies related to flood risks
  - Undertake detailed vulnerability assessments of critical facilities in V or VE zones
  - Continuously update RL/SRL lists

Mitigation Action Plan: Goal 2: Improve Data

- Goal 2: Improve Data Collection, Use, Sharing
  - Participate in state's Emergency Preparedness Conference
  - Develop database of critical facilities, including relevant exposure data
  - Complete site surveys of critical facilities identified as high priorities

Mitigation Action Plan: Goal 2: Improve Data

- Actions to Better Assess Risks
  - Work with NJGS to determine soil and shake characteristics at critical sites
  - Conduct wind assessments on high-priority facilities
  - Conduct wildfire assessments for areas with high hazard potential and exposure
  - Integrate hazmat data with data related to other risk factors
  - Identify areas with hazard and exposure to storms
  - Conduct detailed risk assessments related to dams and levees with high vulnerabilities and/or exposure

Mitigation Action Plan: Goal 3: Improve Capabilities

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 3: Improve Capabilities

- Goal 3: Improve Capabilities, Coordination, and Opportunities
  - Keep RL/SRL mitigation a high priority and provide technical support
  - Provide grants information to potential subgrantees
  - Increase NFIP and CRS participation
  - Enforcement of floodplain management and integration with zoning, subdivision regs., etc. using local and state tools
  - Support appropriate legislative and rules changes at the state/federal levels (TBD)
  - Explore opportunities for direct county support for mitigation planning/implementation

Mitigation Action Plan: Goal 4: Mitigation

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Mitigation Action Plan: Goal 4: Mitigation

- Goal 4: Pursue Mitigation Opportunities
  - Develop SRL strategy that will qualify for 90:10 cost share under FEMA SRL program
  - Promote acquisition and elevation of RL/SRL structures
  - Implement local mitigation projects (detailed in following slides)

Mitigation Action Plan: Clayton Borough

- Structural retrofit of homes located between North Street and Main Street
- Engineering study to assess risk of Silver Lake Dam located on West Clayton Avenue
- Envelope and improved path structural retrofits of data storage facility located at Clayton Community Recreation Center on Washington Avenue
- Envelope, improved path, structural retrofits, and secure roof ballast of EOC located in Clayton Municipal/Police Building on State Highway Route 47
- Structural retrofit of Rustic Village Apartments located on Route 47

Mitigation Action Plan: Clayton Borough (continued)

- Secure roof ballast of shelter at Herma Simmons Elementary School located on West Chestnut Avenue
- Critical facilities protection and hazard threat recognition of propane tank farm located on Delphi Drive Route 47
- Critical facilities protection and hazard threat recognition of Aleris Light Aluminum Company facility

Mitigation Action Plan: Deptford Township

- Hardening and retrofitting of EOC facility located in Municipal Building on Cooper Street
- Engineering Assessment to assess risk of Almonesson Lake Dam located on Cooper Street

Mitigation Action Plan: East Greenwich Township

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Elk Township

- Engineering assessment to assess risk of dam located in Lake Garrison on Country Road Route 553
- Engineering assessment to assess risk of dam located in Lake Gilman on County Road Route 641
- Engineering assessment to assess risk of Hackney Dam located on Richwood Road
- Retrofitting and hardening of data storage facility located in Municipal Building on Country Road Route 667

Mitigation Action Plan: Franklin Township

- Flood proofing, elevation, or acquisition of EOC located in Police/Municipal Building on Delphi Drive
- Acquisition or flood proofing of homes around Franklin Lake, Iona Lake, and McCarty's Lake
- Revisit response plans, evacuation plans and fire lane locations, modify building materials, and provide education on wildfire safety for residents in the Pinelands area
- Envelop hardening and secure roof ballast of shelter at Regional High School
- Engineering studies to access risk and maintenance of Franklin Lake Dam, Iona Lake Dam and McCarty's Lake Dam

Mitigation Action Plan: Franklin Township (continued)

- Critical facilities protection and hazard threat recognition of freight rail carrying chlorine
- Critical facilities protection and hazard threat recognition of Downstown Arrow Corp Service Airport

Mitigation Action Plan: Glassboro Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Greenwich Township

- Improved conveyance/drainage/floodproofing for EOC/Fire Building on Broad St.
- Improved conveyance/drainage/floodproofing for wastewater treatment facility on Washington St.
- Improved conveyance/drainage/floodproofing for Nuhansey School shelter on Swedesboro Rd.
- Improved conveyance/drainage for Valero Refinery at Billingsport Rd.

Mitigation Action Plan: Harrison Township

- Property acquisition of home located at Ellis Mill Road on Lake Gilman
- Flood proofing and small scale structural solutions including conveyance and drainage of the Fire/EMS Station located on Evan Road, Mullica Hill
- Flood proofing, improved conveyance, and drainage of Harrison Township Waste Water Treatment facility located on Woodland Avenue

Mitigation Action Plan: Logan Township

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Mantua Township

- Engineering study to assess risk of dam located on Lambs Road
- Improved conveyance and drainage on Route 45
- Elevation, improved drainage, conveyance, and flood wall for homes located on Hickory Avenue
- Flood proofing, improved drainage, and conveyance of Police Department and data storage facility located on Main Street
- Relocate utility lines underground in the southern end of Mantua Township

Mitigation Action Plan: Monroe Township

- Conveyance, drainage, and floodplain development regulation and evaluation of pipes on Main Street area
- Building evaluation of EOC located in Municipal Building on Virginia Avenue
- Dry flood proofing of two homes located next to Victory Lake and Timber Lake
- Fixing dam located by Victory Lake

Mitigation Action Plan: National Park Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Newfield Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Paulsboro Borough

- Improved conveyance and drainage of Huff Avenue, Thomas Avenue, and 500 block of Delaware Street

Mitigation Action Plan: Pitman Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Rowan University

- Flood proofing, improved conveyance and drainage of shelter at Recreation Center
- Construct bulkhead and improve retention and conveyance of Chestnut Branch Creek
- Improve drainage around Triad Apartments and Bunce Academic Building
- Working on Homeland Security initiatives and educational programs relating to campus safety including, evaluating campus lock down processes, evacuation procedures and emergency communication methods

Mitigation Action Plan:
South Harrison Township

- Envelope hardening, secure roof ballast, and improved load path of Fire/EMS Building located on Main Street
- Public education and outreach program regarding hurricane/evacuation strategies for residents in trailer park located between Harrisville Road and Cedar Grove
- Generator of Communications Facility

Mitigation Action Plan:
Swedesboro Borough

- Engineering study to assess risk of Ore Dam located on Lake Narritockin
- Envelope hardening and improved load path for Police Department located in Borough Hall on Kings Highway
- Envelope hardening and improved load path for Fire/EMS Swedesboro Fire Department located at Kings Highway and Auburn Road

Mitigation Action Plan:
Washington Township

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan:
Wenonah Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan:
West Deptford Township

- Elevation of trailers and levee around Willow Wood Trailer Park located off of Crown Point Road
- Elevation and easements on West 1st Avenue between Mantua and West Deptford Townships

Mitigation Action Plan:
Westville Borough

If your municipality appears without mitigation actions, please contact us after this meeting so we can work with you to develop an action plan.

Mitigation Action Plan: Woodbury City

- Detention and improved conveyance of EOC and data storage facility located at City Hall on Delaware Street
- Improved conveyance, flood proofing, and envelope hardening of Colonial Park Senior Citizen Center located on Evergreen Street
- Improved conveyance and drainage of the following streets: East Red Bank Avenue, South Evergreen Avenue, South Barbara Avenue, Packard Avenue, Delaware Street, Drexel Street, Child Street, and Gerard Street
- Elevation of residences on Packard Avenue

Mitigation Action Plan: Woodbury Heights Borough

- Improved conveyance, drainage, and channel maintenance in Summit Section on Beech Street, Fordham Street, Alliance Street, and Linden Street
- Critical facilities protection and hazard threat recognition of water sewage facility and pipes
- Critical facilities protection of water facility located on Helen Avenue
- Generator for EOC located in Municipal Building

Mitigation Action Plan: Woolwich Township

- Elevation, flood proofing, or acquisition of home located on Liccardello Drive
- Floodwalls for High Hill Road and Moravian Road
- Critical facilities protection and hazard threat recognition of Graso Food Products facility

Next Steps

Next Steps: Plan Document Review

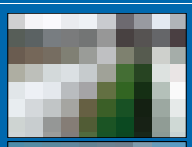
- Complete draft plan available for comment Sept. 9
- Submission to NJOEM/ FEMA RII early October
- Necessary revisions (?)
- Participating jurisdictions adopt plan
- Participating jurisdictions implement the plan and monitor progress
- Five-year plan update cycle

Next Steps: Meetings

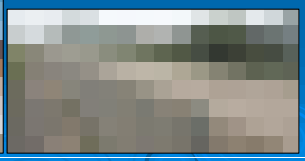
- Mitigation Goals, Objectives & Actions Review
  - Working Group/ Public Meeting: Today
- Plan Document Review
  - Working Group/ Public Meeting: Sept./Oct.

Questions and Discussion

Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

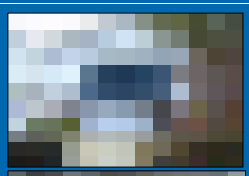


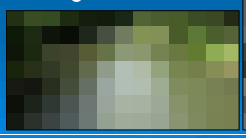
Hazard mitigation measures can include **structural projects** like levees, dams, or safe rooms.

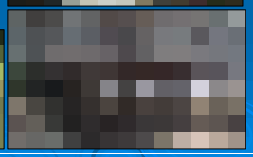


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?

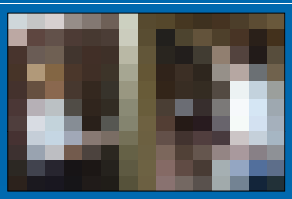
Also, **non-structural projects** like acquisition, elevation, retrofit of buildings, or vegetation management…





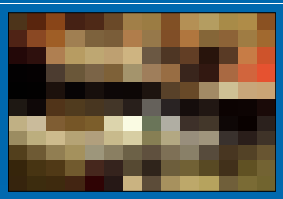


Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…**regulatory practices** like enacting or enforcing building codes, permits, or land use policies…

Hazard Mitigation Planning Overview: What is "Hazard Mitigation"?



…or **training and educational programs** for communities and local agencies.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Soft" mitigation projects include mitigation activities such as:

- building code enforcement
- land development regulations
- public education
- studies and plans
- etc.

Hazard Mitigation Planning Overview: Potential Mitigation Projects

"Hard" mitigation projects or "property protection" construction activities:

- acquisition / elevation / mitigation reconstruction of structures
- retrofits for high wind loads such as installing hurricane shutters
- improving drainage
- etc.

Hazard Mitigation Planning Overview: Acquisition

- Most cost-effective mitigation measure.
- Permanently removes vulnerable property.
- Structure: demolished or relocated; land: open space in perpetuity.
- Requires willing sellers and communities.

Source: *Missouri Buyout Program 2002*

Hazard Mitigation Planning Overview: Elevation

- Raising a structure above Base Flood Elevation.
- Building size, structural integrity, and type of foundation must be considered.
- Different types of elevation appropriate depending on the structure.

A Miami house being elevated (top) and post-elevation (bottom)
Source: FEMA, *Above the Flood*, 2000

Hazard Mitigation Planning Overview: Mitigation Reconstruction

- Pilot program funded under Disaster Declarations 1603 and 1607 (Hurricanes Katrina and Rita)
- If acquisition and elevation are not feasible then a structure may be demolished and reconstructed at the same location.

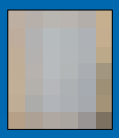
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

Potential projects for civic buildings, health care facilities, utilities, police stations, fire stations, EOCs, jails, schools:

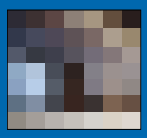
- Shutters/ impact resistant glass in windows
- Strengthen doors
- Hurricane straps/ clips to strengthen roof
- Bolt walls to foundation
- Bury utility lines underground
- Elevate the heating/ventilating/cooling equip.

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

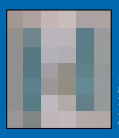
- Install shutters or impact resistant glass on windows



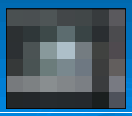
Accordion Shutters



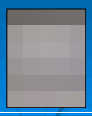
Roll-Down Shutters



Colonial Shutters



Impact Resistant Glass



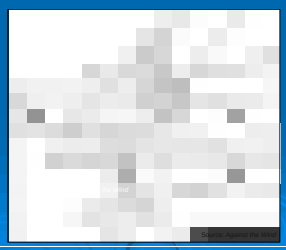
Corrugated Metal Panel

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Strengthen the doors.

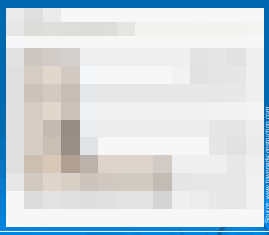
Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Install hurricane straps and clips to strengthen roof.



Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Bolt walls to foundation.

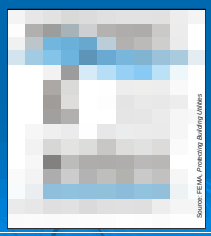


Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Relocate utility lines underground.

Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

- Elevate the heating, ventilating and cooling (HVAC) equipment, such as furnace and hot water heater.



Hazard Mitigation Planning Overview: Hardening/Retrofitting Critical Facilities

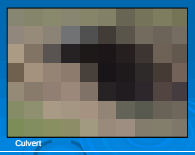
Potential Projects for pump stations, water control facilities, water treatment and delivery systems, power generation facilities, sewage collection and treatment facilities:

- Install backflow valves
- Elevate the generators and pumps
- Anchor fuel tanks
- Eliminate infiltration problems with underground utility systems

Hazard Mitigation Planning Overview: Drainage Improvements

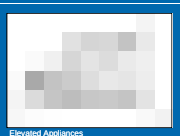
- Creating detention/ retention ponds and reservoirs
- Building floodwalls and diversions
- Constructing storm sewers and increasing culvert capacity
- Maintenance is not an eligible project

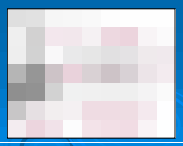

Detention Pond


Culvert

Hazard Mitigation Planning Overview: Wet Floodproofing

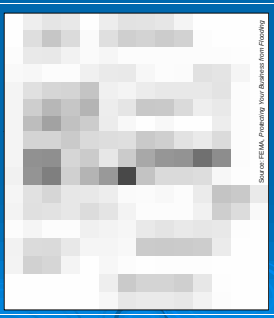
- Modifying uninhabited portions of a structure to allow water in without significant damage
- Water-resistant materials
- Limited use: not practical for structures with living space at ground level, and does not mitigate high velocity floods


Elevated Appliances
source: www.louisianafloods.org


From www.louisianafloods.org

Hazard Mitigation Planning Overview: Dry Floodproofing

- Structure made watertight below vulnerable areas
- Walls sealed and openings waterproofed
- Useful vs. brief floods, <3 ft deep
- Ineffective vs. fast waters

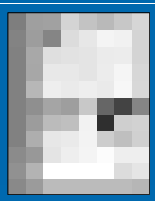

Source: FEMA, *Protecting Your Business from Flooding*

Hazard Mitigation Planning Overview: Community Shelters

- A structure built to withstand extreme winds and flying debris from tornadoes, hurricanes, and other storms that is accessible to the public.
- Guidelines can be found in FEMA 361.
- The shelter cannot be used for anything else.

Hazard Mitigation Planning Overview: Safe Rooms

- Built onsite or manufactured.
- In new or existing homes.
- Need adequate ventilation.
- Anchored to the foundation and structurally isolated from the main structure.
- First floor, basement, or outside.
- See FEMA Publication 320



Hazard Mitigation Planning Overview: 5% Initiative Mitigation Projects

Projects that are eligible for funding can include new, unproven mitigation techniques and technologies where benefits are not proven or not clearly measurable, such as:

- Generators; or
- Disaster warning equipment and systems.

Southern Delaware Valley Hazard Mitigation

Meeting Schedule

Multi-Jurisdictional Natural Hazard Mitigation Planning Project for the Southern Delaware Valley Region (including Camden, Cumberland, Gloucester, and Salem counties)

For the meeting schedules of each of the participating counties, please refer to the county websites:

Download Meeting Materials

Work Group PowerPoint
Work Group Handouts
WorkGroup PowerPoint as an Adobe PDF File
Work Group Handout as an Adobe PDF File

Camden

County Working Group/Public Meeting

When: October 1st @ 7:00 PM
Where: Camden County: DPW; 2311 Egg Harbor Rd., Bldg. 1; Lindenwold, NJ

Cumberland

County Working Group/Public Meeting

When: October 2nd @ 7:00 PM
Where: Cumberland County EOC, 637 Bridgeton Avenue, Bridgeton, NJ 08302

Gloucester

County Working Group/Public Meeting

When: October 2nd @ 7:30 PM
Where: Gloucester County Fire Academy; 200 Shady Lane, Clarksboro, NJ

Salem

County Working Group/Public Meeting

When: September 25th @ 7:00 PM
Where: 135 Cemetery Road,
Woodstown, NJ 08098-9455

Gloucester County, New Jersey Multi-Jurisdictional Hazard Mitigation Plan
Working Group/ Public Meeting Agenda
October 2, 2008

A. Introductions

B. Where we are in the hazard mitigation planning process

C. Review/discuss work in progress: “Committee Draft” Hazard Mitigation Plan

D. Next steps

E. Questions, discussion, public comment

PUBLIC COMMENT FORM, re: Gloucester County NJ Hazard Mitigation Plan (Committee Draft)

Date: _____, 2008

Name: _____

Address: _____

_____

email (optional) _____

Comment: _____

_____

_____

_____

_____

_____

_____

_____

_____

PUBLIC COMMENT FORM, re: Gloucester County NJ Hazard Mitigation Plan (Committee Draft)

Date: _____, 2008

Name: _____

Address: _____

_____

email (optional) _____

Comment: _____

_____

_____

_____

_____

_____

_____

_____

_____

Gloucester County, NJ Multi-Jurisdictional Hazard Mitigation Plan

Working Group/Public Meeting, October 2, 2008

PREPARED FOR:

Gloucester County

Office of Emergency Management

PREPARED BY:

Agenda

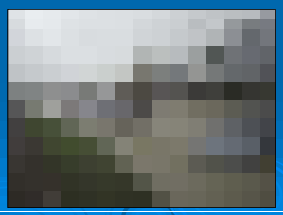
- Introductions
- Where we are in the planning process
- Review/discuss draft Hazard Mitigation Plan
- Next steps
- Questions, discussion, public comment

Introductions

Where We are in the Process

Where We are in the Process: What is "Hazard Mitigation"?

Any measures undertaken to reduce the risks posed by natural and/or manmade hazards on a place and its population.



Where We are in the Process: How is the Plan Developed?

Mitigation planning all boils down to **two basic questions**:

- What hazards present the greatest risk to the County and its citizens?
- What are the most effective ways to reduce those risks?

Where We are in the Process: Plan Development

- ☐ Organize Resources
  - ☐ Build the Planning Team
  - ☐ Data/Document Requests and Review
- ☐ Assess Risks
  - ☐ Hazard Identification
  - ☐ Risk Assessment & Loss Estimation
- ☐ Develop a Mitigation Plan
  - ☐ Capability Assessment
  - ☐ Mitigation Strategies
- ☐ Implement the Plan and Monitor Progress

Where We are in the Process: Plan Development

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  - ☑ Capability Assessment
  - ☑ Mitigation Strategies
- ☐ Implement the Plan and Monitor Progress

Where We are in the Process: Public Involvement

- Press releases
- Public meetings
- Website postings: www.ccpublicsafety.org/hm/hm_home.htm
- Citizen Hazard Mitigation Questionnaire: www.surveymonkey.com/s.aspx?sm=kWdPSTFBI4h0rd01WnnqqQ_3d_3d

Work in Progress:

"Committee Draft" Hazard Mitigation Plan

Draft HMP: Hazard Identification, Profiling

- 32 Natural and technological hazards considered
- Narrowed to 21 hazards for profiles

Draft HMP: Hazard Identification, Profiling

- Risk assessment for most significant hazards
- *Countywide*
  - Flood
  - High Wind—Straight-line Winds
  - Severe Storm—Winter Weather
  - Earthquake/Geological
  - Dam Failure
  - Levee Failure

Draft HMP:
Hazard Identification, Profiling

- Risk assessment for most significant hazards
- *For selected municipalities*
  - Wildfire

Draft HMP:
Risk Assessment

Flood: FIRM Zones

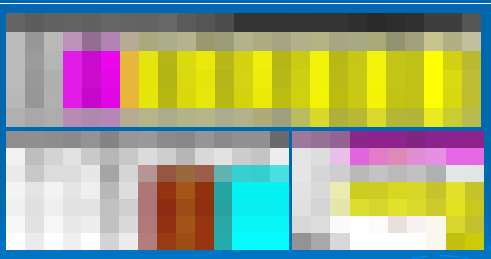
Draft HMP:
Risk Assessment

Flood: RL **Flood: SRL**

Draft HMP:
Risk Assessment

Flood: RL Clusters **Wildfire**

Draft HMP:
Risk Assessment



Earthquake, Wind, Winter Weather, etc.

Draft HMP:
Risk Assessment

Dams

Draft HMP:
Risk Assessment

Draft HMP:
Risk Assessment

Draft HMP:
Risk Assessment

Hazard	PC Risk (100 yr. horizon)
Flood (RL)	$6,253
High Wind—Straight-line Winds	$568
Severe Storm—Winter Weather	$119
Earthquake/Geological	$75
Dam Failure	n/a
Levee Failure	n/a

Draft HMP:
Critical Facilities

- Critical Facilities Inventory by Type:
  - EOCs
  - Data storage facilities
  - Fire/EMS
  - Police stations
  - Emergency shelters
  - Emergency medical care
  - Dams, levees, floodwalls, etc.
  - Power facilities
  - Communications, water, sewer infrastructure
  - Hazmat facilities

Draft HMP:
Critical Facilities

Draft HMP:
Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
  - "All hazards" public education and outreach
  - Public awareness program on local TV
  - Annual workshops related to FEMA grants, targeted to the public and to municipal and other subgrantees
  - Participate in state (NJOEM, NJFS) outreach

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 2: Improve Data Collection, Use, Sharing
  - Develop and maintain relationships with organizations that maintain and store relevant data
  - Coordinate with ongoing efforts to develop and maintain relevant data
  - Undertake site-specific studies related to flood risks
  - Undertake detailed vulnerability assessments of critical facilities in V or VE zones
  - Continuously update RL/SRL lists

Draft HMP: Mitigation Action Plan

- Goal 2: Improve Data Collection, Use, Sharing
  - Participate in state's Emergency Preparedness Conference
  - Develop database of critical facilities, including relevant exposure data
  - Complete site surveys of critical facilities identified as high priorities
  - Various actions to acquire better data for risk assessments

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 3: Improve Capabilities, Coordination, and Opportunities
  - Keep RL/SRL mitigation a high priority and provide technical support
  - Provide grants information to potential subgrantees
  - Increase NFIP and CRS participation
  - Enforcement of floodplain management and integration with zoning, subdivision regs., etc. using local and state tools
  - Explore opportunities for direct county support for mitigation planning/implementation

Draft HMP: Mitigation Action Plan

- Goal 1: Improve Education and Outreach
- Goal 2: Improve Data Collection, Use, Sharing
- Goal 3: Improve Capabilities, Coordination, and Opportunities
- Goal 4: Pursue Mitigation Opportunities

Draft HMP: Mitigation Action Plan

- Goal 4: Pursue Mitigation Opportunities
  - Develop SRL strategy that will qualify for 90:10 cost share under FEMA SRL program
  - Promote acquisition and elevation of RL/SRL structures
  - Implement local mitigation projects (detailed in following slides)

Draft HMP: Municipal Action Plans

- ☐ Clayton
- ☐ Deptford
- ☐ East Greenwich
- ☐ Elk
- ☐ Franklin
- ☐ Glassboro
- ☐ Greenwich
- ☐ Harrison
- ☐ Logan
- ☐ Mantua
- ☐ Monroe
- ☐ National Park
- ☐ Newfield
- ☐ Paulsboro
- ☐ Pittman
- ☐ (Rowan Univ.)
- ☐ South Harrison
- ☐ Swedesboro
- ☐ Washington
- ☐ Wenonah
- ☐ West Deptford
- ☐ Westville
- ☐ Woodbury
- ☐ Woodbury Heights
- ☐ Woolwich

Draft HMP: Municipal Action Plans

- ☑ Clayton
- ☑ Deptford
- ☐ East Greenwich
- ☑ Elk
- ☑ Franklin
- ☑ Glassboro
- ☑ Greenwich
- ☑ Harrison
- ☐ Logan
- ☑ Mantua
- ☑ Monroe
- ☑ National Park
- ☐ Newfield
- ☑ Paulsboro
- ☑ Pittman
- ☑ (Rowan Univ.)
- ☑ South Harrison
- ☑ Swedesboro
- ☑ Washington
- ☑ Wenonah
- ☑ West Deptford
- ☐ Westville
- ☑ Woodbury
- ☑ Woodbury Heights
- ☑ Woolwich

Next Steps

Next Steps:
Plan Review and Adoption

- Complete Committee Draft plan now available for comment
- Submission to NJOEM/ FEMA RII early October
- Necessary revisions (?)
- Participating jurisdictions adopt plan
- Participating jurisdictions implement the plan and monitor progress
- Five-year plan update cycle

Questions, Discussion, and Public Comment

News

For Immediate Release: October 8, 2008
Contact: Freeholder Director Stephen M. Sweeney
(856-853-3390) or Freeholder Jean DuBois (853-3383)

County Utilizes Federal Grant to Complete Regionalized Disaster Planning

(Clayton, NJ) – The Gloucester County Board of Chosen Freeholders announced today that the draft of Gloucester County's Pre-Disaster Mitigation Plan is available for public review and comment. This regional planning effort, the first of its kind in New Jersey, was funded through a federal grant totaling $467,000.

This plan is required by the Federal Emergency Management Agency as part of a nationwide effort to reduce threats posed by natural hazards.

Freeholder Director Stephen M. Sweeney stated that studies have shown that for every dollar spent in reducing hazards, four dollars are saved in the response effort. Gloucester County served as the leader of this four county project, which includes Camden, Salem and Cumberland Counties.

"The County and its municipal partners have conducted hazard and risk assessments within the county and concluded that the primary threats to our communities are flooding, winter storms, high winds and potential dam and levee failures," said Freeholder Director Sweeney.

All of the Municipal OEM Coordinators were invited to participate as well as Rowan University.

Freeholder Jean DuBois said that the purpose of the Pre-Disaster mitigation plan is to identify and develop a framework to reduce threats posed by natural hazards. "From the plan, local officials identify potential projects which may be funded through various FEMA grants," DuBois stated.

The draft plan will be submitted to the State Office of Emergency Management this Friday for review and then to FEMA for final approval. Once the plan receives FEMA's approval, each municipality will have to formally adopt the plan at its respective council/committee meeting.

Residents can review this plan at the following web site:
http://www.ccoem.org/hm/HM_draft.htm. Please forward comments to Len Clark, Gloucester County Office of Emergency Management at leclark@co.glocuester.nj.us.

-30-

C.3 Correspondence

On the following pages are copies of Gloucester County OEM correspondence related to the development of the Plan:

- September 23, 2008 — Letter in support of municipal participation (GCOEM)
- February 14, 2008 — Invitation to participate (GCOEM)
- February 2008 — Letters of Intent (municipalities)
- April 8, 2008 — Email regarding municipal capability survey (CGOEM)
- April 16, 2006 — Email regarding municipal capability survey (CGOEM)
- April 16, 2008 — Email regarding municipal participation requirements (GCOEM)
- April 16, 2008 — Email outreach to interested parties (GCOEM)
- April 16, 2008 — Email regarding critical facilities inventory (GCOEM)
- April 22, 2008 — Email regarding critical facilities inventory (GCOEM)
- April 29, 2008 — Email regarding municipal capability survey (CGOEM)
- May 1, 2008 — Invitation to HMWG (GCOEM)
- May 2008 — List of organizations reached out to for public meeting (CGOEM)
- June 26, 2008 — Email regarding contractor outreach to municipalities (GCOEM)
- July 22, 2008 — Email regarding Plan adoption process (GCOEM)
- July 22, 2008 — Text/request for public meeting notice (GCOEM)
- August 15, 2008 — Invitation to HMWG (GCOEM)
- August 19, 2008 — Text/request for public meeting notice (GCOEM)
- September 8, 2008 — Text/request for public meeting notice (GCOEM)
- September 10, 2004 — Invitation to HMWG (GCOEM)
- September 9, 2008 — Email notice of Committee Draft availability for review (GCOEM)
- September 9, 2008 — Email notice of Committee Draft availability for review (GCOEM)
- September 24, 2008 — Email regarding contractor outreach to municipalities (GCOEM)
- September 24, 2008 — Invitation to HMWG (GCOEM)
- September 24, 2008 — Notice regarding presentation to interested parties (GCOEM)
- October 1, 2008 — Correspondence with member of the public (CGOEM)
- October 5, 2008 — List of interested parties contacted (GCOEM)
- October 6, 2008 — Email regarding Committee Draft for review (GCOEM)
- October 6, 2008 — Correspondence with member of the public (CGOEM)

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, April 08, 2008 12:15 PM
To: Al Silbaugh; Lovell, Andy NREMT/P, NJ MICP; Westville- Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Tom Newman; Newfield Boro-Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Butts, Thomas; DeForrest, Donna P.; Hal Cohen; ROBERT DENGEL
Subject: Disaster Mitiagtion Webpage Questionnaire

Importance: High

To all

As part of your efforts directed to the Pre-Disaster Mitigation Planning effort, I have attached a link for a survey for you to complete. In order to remain eligible to participate, you must complete it.

I completed it in less than five minutes and this counts as time credited toward your participation.

You can access the survey by cutting and pasting this link: http://www.surveymonkey.com/s.aspx?sm=ErL2wzQ4AMmirZrSd1zD3Q_3d_3d. Completed surveys will automatically be tallied by the James Lee Witt Associates.

If you have any concerns or questions, do not hesitate to call.

Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, October 08, 2008 11:46 AM
To: Hal Cohen
Subject: FW: PDM info

From: Clark, Len E.
Sent: Wednesday, April 16, 2008 12:42 PM
To: Al Silbaugh; Andy Lovell; Bill Bittner; 'Donald L. Banks'; Douglas Raggio (dougraggio@comcast.net); 'Edward J. Selb'; 'Eric Voight'; Frank Gurcsik; 'Frank L. McLaughlin'; 'Glenn D. Roemmich'; Glenn Rambo; 'Graham B. Land'; 'Gregory J. Price'; 'Joe Gill'; 'Joseph R. Gill'; Kappler, Dennis; 'Mike DiGiorgio'; 'Milton Sahms'; ROBERT DENGEL; 'Samuel Teague'; Scott E. Campbell (chief@pitman.org); Stephen Cope (scope@woodburypd.com); Thomas Luchay (thomas.luchay@navy.mil); 'Tom Newman'; 'Toni Van Camp'; 'Troy Armstrong'; 'William J. Schweigart'
Cc: Butts, Thomas; Thomas, Diane; DeForrest, Donna P.
Subject: PDM info

To all

James lee Witt Associates has tasked us with validating the info they have gathered so far. To that end, I would like to schedule dates and times we can get together and work through this. From what I have seen, this should not take more than 30 minutes per town.

I apologize for the short notice, but this needs to be completed sooner than later.

I have put together a basic schedule starting tomorrow at 1300 hours. Location will be in my office at the County 9-1-1 Center.

4/17

1300 – Deptford
1330 – Elk
1400 – Franklin
1430 – Glassboro
1500 – Harrison

4/18

0900 – Mantua
0930 – Monroe
1000 – Paulsboro
1030 – Pitman
1100 – Washington
1130 – Westville

4/21

0900 - Woodbury
0930 – Woolwich
1000 – West Deptford

For Wenonah, National Park and Logan, I will catch up with you here at work.

Starting at 1830 hours, I would like to meet with the following towns in the County EOC. I can accommodate some of you after 1030 on Monday, if you have a staff member available

Clayton
East Greenwich
Greenwich
Newfield
South Harrison
Swedesboro
Woodbury Hts.

The person who sits down with me does not have to be you. It can be someone else who knows about the critical facilities in your municipality.

Please confirm that someone will be able to attend.

r/
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, October 08, 2008 11:52 AM
To: Hal Cohen
Subject: FW: GC OEM Mitigation Plan

From: Clark, Len E.
Sent: Wednesday, April 16, 2008 9:17 AM
To: 'mark.stanwood@doe.state.nj.us'
Cc: Griffin, Jeanette
Subject: GC OEM Mitigation Plan

Dr. Stanwood:

Below is a quick blurb concerning GC's development and involvement in the Pre-Disaster Mitigation Plan. School districts are encouraged to participate in the process because of their special district status. Would it be possible to appear before the Roundtable to discuss this project? Feel free to share the info below with anyone you deem suitable.

"The Southern Delaware Valley Region's County Offices of Emergency Management have embarked on an important planning process. The Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Plan is intended to help the community understand the risk it faces from natural and manmade disasters and identify projects and activities that will help reduce the risk of loss of life, injury or property damage. In addition, the plan will improve the eligibility of participating jurisdictions to apply for and receive certain types of federal grant funding.

All 90 municipalities in the Southern Delaware Valley Region's four Counties are participating in the process and the Counties have hired a consultant with funding from the Federal Emergency Management Agency. We are contacting you at this time to make you aware that your organization can also be a participant in the process and reap the same potential benefits as the local municipal governments. Naturally, there would be a commitment of time on the part of your organization but the plan presents an excellent opportunity for you to better understand potential problems for your facilities and operations due to these hazards and identify possible solutions.

Please contact me to discuss what this project might mean to you and your organization at your earliest convenience."

Thanks,
Len Clark
307-7156

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, October 08, 2008 11:46 AM
To: Hal Cohen
Subject: FW: Pre-Disaster Mitigation survey

From: Clark, Len E.
Sent: Wednesday, April 16, 2008 9:06 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; 'Donald L. Banks'; Douglas Raggio (dougraggio@comcast.net); 'Edward J. Selb'; 'Eric Voight'; Frank Gurcsik; 'Frank L. McLaughlin'; 'Glenn D. Roemmich'; Glenn Rambo; 'Graham B. Land'; 'Gregory J. Price'; 'Joe Gill'; 'Joseph R. Gill'; Kappler, Dennis; 'Mike DiGiorgio'; 'Milton Sahms'; ROBERT DENGEL; 'Samuel Teague'; Scott E. Campbell (chief@pitman.org); Stephen Cope (scope@woodburypd.com); Thomas Luchay (thomas.luchay@navy.mil); 'Tom Newman'; 'Toni Van Camp'; 'Troy Armstrong'; 'William J. Schweigart'
Cc: DeForrest, Donna P.; Butts, Thomas; Hal Cohen
Subject: Pre-Disaster Mitigation survey

To all

Here is some amplifying information concerning the survey.

If you have completed it already, THANK YOU.

As part of the Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Plan, we are conducting a Capability Assessment. This assessment is focused on determining the ability of the Counties and participating communities to plan and implement hazard mitigation projects and activities. The assessment is being conducted as an on-line survey. At your earliest convenience, please visit the website located at the URL listed below and complete the survey. The following are a couple of important things to note about this survey:

First, at least one representative of your community must complete this survey for your community to be recognized as a full participant in the hazard mitigation planning process. The deadline to complete this survey is Friday, May 2.

Second, there are a number of "yes" or "no" questions in the survey on general topics. If you answer "no", the survey software automatically skips any remaining detailed questions on that topic. This is to make sure you do not have to spend any more time filling out this survey than necessary. However, if you know of someone else in your community who could answer questions in areas you are not familiar with, please forward this message to them and ask them to complete the survey as well. There is no limit to how many people can complete the survey from a particular community.

We will share the results of the survey with the Southern Delaware Valley Region Hazard Mitigation Steering Committee first and then with the Local Emergency Management Coordinators as soon as we have compiled the results.

The URL for the survey is: http://www.surveymonkey.com/s.aspx?sm=ErL2wzQ4AMmirZrSd1zD3Q_3d_3d. Cut and paste this link into your web browser.

If you have any questions about the intent or need to complete this survey, please let me know. If you encounter any problems with the survey, please contact: Matt Buddie, with James Lee Witt Associates, the consultant for this project (e-mail address: mbuddie@staff.jlwitt.com).

r/
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, April 16, 2008 9:20 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Butts, Thomas; DeForrest, Donna P.; Hal Cohen
Subject: PDm Local Particiaption Standards

To all:

When completed, the Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Plan will be submitted to the New Jersey Office of Emergency Management (NJOEM) and the Federal Emergency Management Agency (FEMA) for approval. One of the criteria these agencies use to evaluate the plan is participation by local municipalities. Also, for your community to receive approval from FEMA and thereby gain eligibility for certain types of federal hazard mitigation project funds, the following are minimum requirements for your community's participation:

1. Complete Capability Assessment on-line survey. A separate e-mail regarding this survey has been sent to you. This survey must be completed by at least one representative of your community by Friday, May 2.

2. Provide data regarding Asset Inventories - Critical Facilities and other important facilities in your community. A separate e-mail will be sent to you.

3. Attend at least two (2) Local Coordinator Meetings during the planning process. It is anticipated that the planning process will be underway until January 2009. However, the meetings where your participation will be the most productive are in May and July of 2008.

4. Adopt the plan by formal resolution of your local elected officials at the end of the planning process.

In addition, to make sure the planning process is as effective as possible, I am recommending you solicit involvement of any one else in your community who might have information to contribute about potential problems with natural hazards or could be involved in the implementation of projects. For example, public works staff often knows where there is drainage or recurrent flooding problems in the community and facility managers for local schools and hospitals will have information about their facilities that may be useful during the development of the plan. Also, some recommendations might involve land use planning or building permitting so involving the folks in your community who are responsible for these activities would also be important.

One way to include these folks in the process is the Capability Assessment on-line survey in item 2 above. In some cases it may also be worth inviting them to attend the Local Coordinators meetings to better understand the planning process and how they might benefit from a better understanding of the risks they face.

If you have questions about any of these requirements, please do not hesitate to contact me.

r/
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, April 22, 2008 10:01 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Butts, Thomas; DeForrest, Donna P.; Hal Cohen
Subject: PDM Info
Attachments: CF inventory instructions 040908.doc

To all

I have sent each of you the PDM critical facilities information in an Excel worksheet. Attached to this email are the instructions for completing the info needed by the contractor. Do not worry about taking photographs at this time. Plz return the updates to me by April 28.

r/
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, April 29, 2008 9:45 AM
To: Samuel Teague; Gregory J. Price; Troy Armstrong; Lovell, Andy NREMT/P, NJ MICP; Newfield Boro-Toni Van Camp; rambo_k9@yahoo.com; William J. Schweigart
Cc: DeForrest, Donna P.; Hal Cohen
Subject: Capability Survey Follow-up

Importance: High

As part of the Southern Delaware Valley Region Multi-Jurisdictional Hazard Mitigation Plan, we are conducting a Capability Assessment. This assessment is focused on determining the ability of the four sponsoring Counties (Camden, Cumberland, Gloucester and Salem) and participating communities to plan and implement hazard mitigation projects and activities to reduce the risk of injury, fatalities and property damage from natural disasters. We hope you will take a few minutes to complete the survey in order to provide a fuller picture of your municipality's mitigation capabilities.

The assessment is being conducted as an on-line survey. At your earliest convenience, please cut-and-paste the following URL into your web browser and complete the survey. http://www.surveymonkey.com/s.aspx?sm=ErL2wzQ4AMmirZrSd1zD3Q_3d_3d.

The following are a couple of important things to note about this survey:

- The deadline to complete this survey is Friday, May 16.
- There are a number of "yes" or "no" questions in the survey on general topics. If you answer "no", the survey software automatically skips any remaining detailed questions on that topic. This ensures that you do not have to spend any more time filling out this survey than necessary.
- We will share the results of the survey with the Southern Delaware Valley Region Hazard Mitigation Steering Committee first and then with the Local Emergency Management Coordinators as soon as we have compiled the results.

If you have any questions about this survey, please let me know. If you encounter any technical problems with the survey, please contact: Matt Buddie, with James Lee Witt Associates, the consultant for this project (e-mail address: mbuddie@staff.jlwitt.com).

Tx,

Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Thursday, May 01, 2008 2:39 PM
To: Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Butts, Thomas; DeForrest, Donna P.; DeAngelo, Jack; wrruch@verizon.net; Hal Cohen
Subject: May Coordinators Meeting
Attachments: May meeting announcement.doc

To all

We have moved the May Local Coordinators meeting to coincide with one of the required public meetings for the PDM Plan. The meting is moved from May 22 to May 29. Location is still at the Fire Academy at 7:30 pm. Plz see attached. Please feel free to share as you see fit.

Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Thursday, September 25, 2008 10:41 AM
To: Hal Cohen
Subject: Attempted Contacts for PDM planning process

Hal,

I attempted to contact the following organizations via telephone to invite them to the original public meeting on May 29, 2008.

Delaware Estuary Levee Organization - contacted
NJ Nursery and Landscape Assn
NJ Christmas Tree Growers Assn
Rutgers Cooperative Research and Extension Service - contacted
South Jersey Resource Conservation and Development Council - contacted
USDA Natural Resources Conservation Service - contacted
Ducks Unlimited
National Watershed Coalition
SJ Land and Water Trust
Great Egg Harbor Watershed Assn
Cooper River Watershed Assn
Delaware River Keeper Network
NJ Conservation Foundation
Smart Growth Network
Delaware Valley Regional Planning Commission - contacted
Sierra Club - contacted

r/
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Thursday, June 26, 2008 8:47 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: DeForrest, Donna P.; Butts, Thomas; Hal Cohen
Subject: PDM Info

To all

As part of the PDM project, a planner from James Lee Witt should be contacting you (or may have already) to discuss and confirm information for the PDM project. Realizing that some of you are volunteers and are only available at night, they will contact during those hours. Remember to track your time.

Also, if you owe me timesheets, please submit them ASAP. If I cannot verify your participation, you may not be able to adopt the plan due to a perceived lack of participation. As with all other projects, it's all about the paperwork.

Tx,
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, July 22, 2008 8:54 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Hal Cohen; Anthony Buono ; James Manski; Joe Sever; John Milligan; Polk, Dave; spino@camdencounty.com; Westergaard, Rick
Subject: FW: Planning Guidence and Crosswalk
Attachments: Planning Guidence.pdf; Local_Mitigation_Plan_Crosswalk only_FINAL070108.doc

Importance: High

To Local Coordinators:

This is FYI so that you can review and understand the process we need to follow for final FEMA approval of the PDM Plan. Once the final draft is approved by FEMA, it is deemed "approved pending adoption". At that point, you will need to approach the town governing body for final adoption through resolution. I will need copies of the final resolution for the file.

Len

From: JEFFREY CRAPSER [mailto:LPP4435@gw.njsp.org]
Sent: Monday, July 21, 2008 1:51 PM
To: bradeis_michael@aclink.org; conover_edward@aclink.org; jones_vincent@aclink.org; John Laws - Cumberland County OEM; Essex County OEM; willbduffy@aol.com; drazzetti@bcoem.org; leventhal@bcoem.org; Matt Ziemkiewicz; elmer@camdencounty.com; gmartin@camdencounty.com; George Jeffers - Burlington County OEM; ktuno@co.burlington.nj.us; sking@co.burlington.nj.us; Wayne Comegno - Burlington County OEM; Cape May County OEM; mccall@co.cape-may.nj.us; Cumberland County OEM Net; jamesma@co.cumberland.nj.us; josephse@co.cumberland.nj.us; Melinda Weisgerber - Cumberland OEM; Newell Branin - Cumberland County OEM; Anthony Gioielli - Cumberland County Dir Pub Safety; DeForrest, Donna P.; DeAngelo, Jack; Clark, Len E.; bpowell@co.hunterdon.nj.us; Frank Veneziale - Hunterdon County OEM; George Wagner - Hunterdon County OEM; john.ferguson@co.middlesex.nj.us; rory.zach@co.middlesex.nj.us; gmctighe@co.monmouth.nj.us; Elaine Caccavale - Morris County OEM; Keith Heimburg - Morris County OEM; RLoock@co.morris.nj.us; SDiGiralomo@co.morris.nj.us; Steve Donnelly - Moirris County OEM; tzellman@co.morris.nj.us; Jackie Ducker - Ocean County OEM; Keith Klements - Ocean County OEM; Mike Osborn - Ocean County OEM; oceancountyemergencymanagement@co.ocean.nj.us; blazakis@co.somerset.nj.us; Gunzelman@co.somerset.nj.us; Doug Vorlocker - Somerset County OEM; Frank Wheatley - Warren County OEM; mkadash@co.warren.nj.us; wcoem@co.warren.nj.us; Tom Butts - Gloucester County; Nicholas Morici; New Jersey Emergency Operations Center; Gerry Drasheff - Hudson County OEM; jburns@hudsoncountynj.org; J. Konopka - Hudson County OEM; Dean Raymond - Mercer County OEM; Bob Hartman - Mercer County OEM; JHowson@NJHA.com; Bill Dressel - NJ League of Municipalities; Ed Murphy - Passaic County OEM; Maryann Trommelen - Passaic County OEM; Passaic County OEM; Robert Lyons - Passaic County OEM; Carl.Wentzell@salemcountynj.gov; Dave Polk - Salem County OEM; Pat Spring - Salem County NIMS; Margaret Murnane - Monmouth County OEM; edanielson@sussexcountysheriff.com; Mark Vogel - Sussex County OEM; runtig@sussexcountysheriff.com; blaganga@ucnj.org; cscaturo@ucnj.org; Salena Carroll
Cc: Helen Owens; James Watt; Joseph Ruggeri; Gary Seidenfeld; Mike Foley; Scott Duell; Sharon Edwards; John Donnelly; George Georgeles; EDWARD CETNAR; Kevin Fowler; PAUL MILLER; Don Barlow; Jeff Mottley; KATHERINE KLEMP; Jerome Hatfield; Kathy Lear; Nick Massa; TEMA MORELLI; Stacey Murphy; Lance Oram; Kelly Ottobre; Thomas Balint; Howard Wolf
Subject: Planning Guidence and Crosswalk
Importance: High

To all
Attached is the current guidance from FEMA for Multi-Hazard Planning. I have also attached the new Crosswalk. Please distribute this to your local OEM and contractors that are writing your plans. Any questions please give me a call
Thanks
Jeff

This Guidance is effective for all local mitigation plans approved by FEMA on or after October 1, 2008. It supersedes Part 3 and the corresponding plan review crosswalk in Part 4 of the *Multi-Hazard Mitigation Planning Guidance under DMA 2000*, also known as the "Blue Book" (released March 2004), to address the requirements for the development and review of new or updated local mitigation plans.

The revised *Local Multi-Hazard Mitigation Planning Guidance* contains several significant changes:

- Provides guidance on the required 5-year review and update of local mitigation plans;
- Incorporates requirements for flood mitigation plans previously administered in 44 CFR 78, *Flood Mitigation Assistance;*
- Provides comparisons between planning requirements in 44 CFR Part 201, *Mitigation Planning*, and the Community Rating System (CRS); and
- Incorporates policies and frequently asked questions on local mitigation planning that were released since the original March, 2004 guidance was issued.

This publication is one of three guidance documents on implementing the Mitigation Planning regulations in 44 CFR Part 201. In addition to this *Local Multi-Hazard Mitigation Planning Guidance,* the Blue Book currently includes the State Standard and Enhanced Mitigation Plans guidance (44 CFR 201.4 and 201.5); and a separate *Tribal Multi-Hazard Mitigation Planning Guidance* document will be produced for Tribal Mitigation Plans (44 CFR 201.7).

I am providing this new guidance to you for dissemination to local governments. As you know, under 44 CFR 201.6, local governments must have a FEMA-approved Local Mitigation Plan in order to apply for and/or receive project grants under the following hazard mitigation assistance programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)

FEMA may require a Local Mitigation Plan under the Repetitive Flood Claims (RFC) program, at which time this policy will apply to those governments that apply for and/or receive assistance under the RFC program as well.

This Guidance is available and posted for individual download on the mitigation planning web pages at www.fema.gov/plan/mitplanning.

Sgt. Jeff Crapser
State Hazard Mitigation Officer
New Jersey State Police
Homeland Security Branch

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, July 22, 2008 11:05 AM
To: Hal Cohen
Subject: FW: Public Notice

From: Clark, Len E.
Sent: Tuesday, July 22, 2008 11:05 AM
To: Press-Costello, Debra E.
Subject: RE: Public Notice

How about twice – August 10 and 17. Use whatever are the "official" newspapers. I'll need the affidavits too.

From: Press-Costello, Debra E.
Sent: Tuesday, July 22, 2008 11:02 AM
To: Clark, Len E.
Subject: RE: Public Notice

How many times should it run and is just the Times good or should it go to the Courier, too?

Debbie

Debra E. Press-Costello, Deputy Clerk
Board of Chosen Freeholders
County of Gloucester
856-853-3273 (telephone)
856-853-3308 (fax)
Email: dcostelo@co.gloucester.nj.us

From: Clark, Len E.
Sent: Tuesday, July 22, 2008 11:00 AM
To: Press-Costello, Debra E.
Subject: RE: Public Notice

Yep

From: Press-Costello, Debra E.
Sent: Tuesday, July 22, 2008 11:00 AM
To: Clark, Len E.
Subject: RE: Public Notice

This?

Debbie

Debra E. Press-Costello, Deputy Clerk
Board of Chosen Freeholders
County of Gloucester
856-853-3273 (telephone)
856-853-3308 (fax)
Email: dcostelo@co.gloucester.nj.us

From: Clark, Len E.
Sent: Tuesday, July 22, 2008 10:52 AM
To: Press-Costello, Debra E.
Subject: Public Notice

Debbie

I need you to run another series of Public meeting announcements for Pre-Disaster Mitigation Public meetings.

Location -- Gloucester County Fire Academy
Date – August 19, 2008
Time – 7:30 pm

Go ahead and use the same language from the last time.

Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Monday, September 08, 2008 11:28 AM
To: Hal Cohen
Subject: FW: FEMA_DisMit_PH3

From: Press-Costello, Debra E.
Sent: Monday, September 08, 2008 11:26 AM
To: 'kelly maccaroni'
Cc: Clark, Len E.
Subject: FEMA_DisMit_PH3

Kelly - Please run this ad one time on September 21 and one time on September 28. Thanks - Debbie

---

NOTICE OF PUBLIC MEETING

Pursuant to Federal Emergency Management Agency Disaster Mitigation Act of 2000 a meeting will be held on Thursday, October 2, 2008 at 7:30 p.m. This meeting will be held at the Gloucester County Fire Academy located on County House Road in Clarksboro, New Jersey.

The purpose of this meeting discuss final draft of Gloucester County's Pre-Disaster Mitigation Plan, solicit input from interested parties and citizens, prepare for submission to NJOEM and FEMA.

Debra E. Press-Costello

Debra E. Press-Costello, Deputy Clerk
Board of Chosen Freeholders
County of Gloucester

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, September 24, 2008 2:40 PM
To: Hal Cohen
Subject: FW: Reminder - meeting next week

From: Clark, Len E.
Sent: Friday, August 15, 2008 11:14 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; 'Donald L. Banks'; Douglas Raggio (dougraggio@comcast.net); 'Edward J. Selb'; 'Eric Voight'; Frank Gurcsik; 'Frank L. McLaughlin'; 'Glenn D. Roemmich'; Glenn Rambo; 'Graham B. Land'; 'Gregory J. Price'; 'Joe Gill'; 'Joseph R. Gill'; Kappler, Dennis; 'Mike DiGiorgio'; 'Milton Sahms'; ROBERT DENGEL; 'Samuel Teague'; Scott E. Campbell (chief@pitman.org); Stephen Cope (scope@woodburypd.com); Thomas Luchay (thomas.luchay@navy.mil); Tim Michener (Michener@rowan.edu); 'Tom Newman'; 'Toni Van Camp'; 'Troy Armstrong'; 'William J. Schweigart'
Cc: Butts, Thomas
Subject: Reminder - meeting next week

To all

PDM working Group/public Meeting, August 19, 2008, 7:30pm, GC Fire Academy

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Monday, September 08, 2008 10:39 AM
To: Press-Costello, Debra E.; Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Michener@rowan.edu; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Butts, Thomas; DeAngelo, Jack; wrruch@verizon.net; DeForrest, Donna P.; Ross, Barbara; Hal Cohen
Subject: Final Pre-Disaster Public Meeting

To all

Date - October 2, 2008
Time - 730 pm
Location - GC Fire Academy

Purpose: To discuss final draft of Gloucester County's Pre-Disaster Mitigation Plan, solicit input from interested parties and citizens, prepare for submission to NJOEM and FEMA.

Debbie

Could you prepare and run a public notice for this to show up on September 21 and 28 in the normal local papers?

Thanks,
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, September 24, 2008 2:41 PM
To: Hal Cohen
Subject: FW: Pre-Disaster Mitigation Meeting

From: DeForrest, Donna P.
Sent: Tuesday, August 19, 2008 9:56 AM
To: 'Albert Silbaugh'; Butts, Thomas; 'Chief Rodney Sawyer'; Clark, Len E.; DeAngelo, Jack; 'Donald L. Banks'; 'Doug Raggio'; 'Edward J. Selb'; 'Eric Voight'; 'Frank Gurcsik'; 'Frank L. McLaughlin'; 'Glenn D. Roemmich'; 'Glenn Rambo'; 'Graham B. Land'; 'Gregory J. Price'; Woods, Jr., James F.; 'Jay Hughes'; 'Joe Gill'; 'Joseph R.Gill'; Kappler, Dennis; Lovell, Andy NREMT/P, NJ MICP; 'Mike DiGiorgio'; 'Milt Sahms'; 'Milton Sahms'; Newfield Boro-Toni Van Camp; Ross, Barbara; 'Samuel Teague'; 'Scott E. Campbell'; 'Sgt. Robert Dengel'; 'Stephen Cope'; 'Thomas Luchay'; 'Tom Newman'; 'Troy Armstrong'; 'Vincent DiPietro'; 'Walter R. Ruch, Jr.'; Westville- Bill Bittner; 'William J. Schweigart'
Subject: Pre-Disaster Mitigation Meeting

Just a reminder: Tonight's public meeting on the County's Pre-Disaster Mitigation Plan (7:30 PM at the Fire Training Academy) will take the place of the normal September local coordinators meeting.

See you this evening.

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, September 09, 2008 9:53 AM
To: Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Michener@rowan.edu; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Hal Cohen; Butts, Thomas; Westergaard, Rick
Subject: Draft PDM Plan Available For Comment

Interested parties:

Please be advised that the committee draft version of the Gloucester County Multi-Jurisdictional Hazard Mitigation Plan is now available for download from the plan website, http://sharepoint.jlwitt.com/southerndelaware/default.aspx. When prompted the login is "sdelawareuser", the password is "delaware287". We invite your review and comments on this document. These should be submitted to Len Clark at leclark@co.gloucester.nj.us or GCOEM, 1200 North Delsea Drive, Clayton, NJ 08312. Comments will be accepted until October 3, and a public meeting regarding this document will take place at the Gloucester county fire Academy, County House Road, Clarksboro, NJ on October 2, 2008 at 7:30 PM..

Review and comment have been solicited from all neighboring counties, governments and government agencies impacted or affected by recommended hazard mitigation actions contained in the plan, and special districts such as schools, utilities, etc.

Thank you for your attention and contribution to this important effort.

Yours sincerely,
Len Clark
Deputy Coordinator
GCOEM

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, September 09, 2008 3:40 PM
To: Butts, Thomas; Al Silbaugh; Andy Lovell; Bill Bittner; Donald L. Banks; dougraggio@comcast.net; Edward J. Selb; Eric Voight; Frank Gurcsik; Frank L. McLaughlin; Glenn D. Roemmich; Glenn Rambo; Graham B. Land; Gregory J. Price; Joe Gill; Joseph R. Gill; Kappler, Dennis; Mike DiGiorgio; Milton Sahms; ROBERT DENGEL; Samuel Teague; chief@pitman.org; scope@woodburypd.com; thomas.luchay@navy.mil; Michener@rowan.edu; Tom Newman; Toni Van Camp; Troy Armstrong; William J. Schweigart
Cc: Hal Cohen; JEFFREY CRAPSER
Subject: PDM plan draft website

<<HM_draft.url>> To all

The public access web site is available for your review and comment.

See link below...

The message is ready to be sent with the following file or link attachments:

Shortcut to: http://www.ccoem.org/hm/HM_draft.htm

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, September 24, 2008 1:19 PM
To: Lovell, Andy NREMT/P, NJ MICP; Westville- Bill Bittner; Gregory J. Price; Newfield Boro- Toni Van Camp; Troy Armstrong
Cc: DeForrest, Donna P.; Butts, Thomas; Hal Cohen
Subject: Pre-disaster Mitigation Info

Importance: High

To all

Pleae reach out for Fay Makrinos at the following contact numbers for the PDM plan. Time is running out and I would hate to see you precluded from any potential funding sources.

James Lee Witt Associates
222 West State Street, Suite 208
Trenton, NJ 08608

Blackberry: 732.362.6234
Fax: 609.393.3113
Email: fmakrinos@wittassociates.com

Tx,
Len

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Friday, September 26, 2008 12:09 PM
To: Hal Cohen
Subject: RE: public process documentation

Hal

On 10/28, I will be presenting to the Delaware Estuary Levee Organization (DELO) on the plan.

Len

From: Hal Cohen [mailto:hcohen@wittassociates.com]
Sent: Wednesday, September 24, 2008 2:28 PM
To: James Manski; Polk, Dave; Sam Spino; Clark, Len E.
Cc: Stuart Wallace
Subject: public process documentation

Gentlemen –

Just a friendly reminder that in the next few days we really need to get in all of your documentation regarding outreach, as noted on the "Appendix C (Planning Process)" handout from last week's meeting (attached).

We especially need:

- Proof that meetings were noticed in newspapers
- Missing sign-in sheets
- Proof that other interested parties were invited to participate DURING the process (not just "after the fact," to review the doc), and lists of who you contacted
- Some kind of indication (agendas, meeting notes, emails) that all the local coordinators were made aware of the participation requirements
- Those letters (penned by Jim) vouching for the municipalities' participation

Also, anything you can supply that documents ***ongoing or planned*** outreach (CERT booth info, .ppts to the elks club or the school board, presentation material made available to local coordinators, etc., etc., etc.) should be supplied to me ASAP.

The FEMA reviewers may or may not "ding" us on elements of the plan here and there, but at this point I would be VERY surprised if the reviewers would be very happy with how we've documented the public process.

Thanks much.

-- hc

PS: Len, don't forget an image file of the county seal; if I get that by next week I can update it for the next draft

_____

Hal Cohen, AICP
Senior Planner
James Lee Witt Associates

202.585.0780 x110 (ofc)

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Wednesday, October 01, 2008 10:17 AM
To: Patricia H. Olejarski
Cc: Butts, Thomas; Kappler, Dennis; Hal Cohen
Subject: RE: next mitiagtion meeting

Ma'am

Good to hear from you. Yes, we do have a meeting tomorrow night, 730 at the Fire Academy in Clarksboro.

If you wish to view the draft plan, here is the website - http://www.ccoem.org/hm/HM_draft.htm

Cumberland County is hosting the web site for all four counties.

Your street has been included as a project for future funding consideration.

Please share this info with your neighbors.

Regards,
Len

From: Patricia H. Olejarski [mailto:nursie2@comcast.net]
Sent: Wednesday, October 01, 2008 6:13 AM
To: Clark, Len E.
Subject: Re: next mitiagtion meeting

Len,
Hope you are well--
Haven't heard from you--
Is there a meeting tomorrow eve?
Patty O.

> ----- Original Message -----
> **From:** Clark, Len E.
> **To:** Patricia H. Olejarski
> **Sent:** Monday, August 11, 2008 10:10 AM
> **Subject:** next mitiagtion meeting
>
> Ma'am
>
> The next meeting to discuss the plan is scheduled for Tuesday August 19 at 730. The location is the same as before, the Gloucester County Fire Academy. Please feel free to spread the word.
>
> r/
> Len Clark

Potential Partnerships/Stakeholders/Information Sources
For PDM Planning Efforts

Delaware Estuary Levee Organization
NJ Nursery and Landscape Assn
NJ Christmas Tree Growers Assn
Rutgers Cooperative Research and Extension Service
South Jersey Resource Conservation and Development Council
USDA Natural Resources Conservation Service
American Water Resources Assn, NJ Section
NJ Assn for Floodplain Management
Ducks Unlimited
National Watershed Coalition
SJ Land and Water Trust
Salem County Watershed Task Force
Citizens United to Protect the Maurice River and Its Tributaries, Inc.
Great Egg Harbor Watershed Assn
Cooper River Watershed Assn
Delaware River Keeper Network
Watershed Assn of Pennsauken Creek
Newton Creek Watershed Assn
NJ Conservation Foundation
NJ Future
Sustainable Communities Network
Smart Growth Network
NJ County Planners Assn
NJ Planning Officials
Delaware Valley Regional Planning Commission
Wilmington Metropolitan Planning Area Commission

This is not an exclusive list

Note: Highlighted entries were contacted via email on 10/5/08

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Monday, October 06, 2008 10:12 AM
To: taaffe@nj.usda.gov; njnla1@aol.com; wedwards@rcn.com; Frecon, Jerry; coordinator@sjrcd.org; khale@raritanbasin.org; Laura.Tessieri@drbc.state.nj.us; dunderwood@mswcc.state.ms.us; sjwatersheds@verizon.net; drn@delawareriverkeeper.org; forrivers@aol.com; akers@gowebway.com; info@njconservation.org; njfuture@njfuture.org; info@sustainable.org; info@smartgrowth.org; rbickel@dvrpc.org; wilmapco@wilmapco.org
Cc: Hal Cohen
Subject: Draft Hazard Mitigation Plans avaialbe for your review and comment

To Whom It May Concern:

Gloucester, Salem, Camden and Cumberland Counties have drafted a regional Pre-Disaster Mitigation Plan for FEMA. The drafts of the individual county efforts are available for your review and comment. You may find them at http://www.ccoem.org/hm/HM_draft.htm.

Please feel free to return comments to the Points fo Contact listed for each county.

r/
Len Clark

Hal Cohen

From: Clark, Len E. [leclark@co.gloucester.nj.us]
Sent: Tuesday, October 07, 2008 9:07 AM
To: Patricia H. Olejarski
Cc: Butts, Thomas; Kappler, Dennis; Hal Cohen
Subject: RE: next mitiagtion meeting

I can understand your frustration. The plan is designed to identify hazards and risks faced across the County. Our primary threats are flooding, winter storms, high winds, dam & levee failures. We have worked with each municipality to identify projects that could be completed within the next five years, as long as the resources to do so are or become available. Your issue has been identified in the plan as one of the projects for National Park. See section 9 pg 238 of Gloucester County's plan.

Len

-----Original Message-----
From: Patricia H. Olejarski [mailto:nursie2@comcast.net]
Sent: Monday, October 06, 2008 6:49 PM
To: Clark, Len E.
Subject: Re: next mitiagtion meeting

Len,
Thank you for the update, but , honestly, what does all this mean? The draft I tried to look through online is enormous!! I guess I'm asking what are the applications for me,if any? Or do I just have to wait to be flooded again? I'm not trying to be pushy, just don't understand. Thanks for all your efforts-- Patty O.
----- Original Message -----
From: "Clark, Len E." <leclark@co.gloucester.nj.us>
To: "Patricia H. Olejarski" <nursie2@comcast.net>
Sent: Monday, October 06, 2008 8:40 AM
Subject: RE: next mitiagtion meeting

I was looking out for you. The meeting consisted of a review of the plan draft, which you read on-line. We have only a few minor typographical edits to make and the plan will be submitted to the NJ Office of Emergency Management (the State Hazard Mitigation Officer) for review. Then it will be submitted to FEMA for final review. They always have some minor edits to make. After resubmission, we anticipate it will be "approved, pending adoption by local authorities". Then I have to present it to local councils for adoption.

Len

From: Patricia H. Olejarski [mailto:nursie2@comcast.net]
Sent: Sun 10/5/2008 10:49 AM
To: Clark, Len E.
Subject: Re: next mitiagtion meeting

Len,
So sorry I missed the meeting. Was hoping you would be able to give me an update, please?
Patty O.

----- Original Message -----
From: Clark, Len E. <mailto:leclark@co.gloucester.nj.us>
To: Patricia H. Olejarski <mailto:nursie2@comcast.net>
Cc: Butts, Thomas <mailto:tbutts@co.gloucester.nj.us> ; Kappler, Dennis

<mailto:dkappler@co.gloucester.nj.us> ; Hal Cohen <mailto:hcohen@wittassociates.com>
Sent: Wednesday, October 01, 2008 10:16 AM
Subject: RE: next mitiagtion meeting

Ma'am

Good to hear from you. Yes, we do have a meeting tomorrow night, 730 at the
Fire Academy in Clarksboro.

If you wish to view the draft plan, here is the website -
http://www.ccoem.org/hm/HM_draft.htm

Cumberland County is hosting the web site for all four counties.

Your street has been included as a project for future funding consideration.

Please share this info with your neighbors.

Regards,

Len

From: Patricia H. Olejarski [mailto:nursie2@comcast.net]
Sent: Wednesday, October 01, 2008 6:13 AM
To: Clark, Len E.
Subject: Re: next mitiagtion meeting

Len,

Hope you are well--

Haven't heard from you--

Is there a meeting tomorrow eve?

Patty O.

----- Original Message -----

From: Clark, Len E. <mailto:leclark@co.gloucester.nj.us>

To: Patricia H. Olejarski <mailto:nursie2@comcast.net>

Sent: Monday, August 11, 2008 10:10 AM

Subject: next mitiagtion meeting

Ma'am

The next meeting to discuss the plan is scheduled for Tuesday August 19 at
730. The location is the same as before, the Gloucester County Fire Academy. Please feel free to spread the word.

r/

Len Clark

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Appendix D
General Hazard Descriptions

The following is a general description for each of the hazards listed below. The complete profile for each hazard can be found in Section 6.3 of the Gloucester County Multi-Jurisdictional Hazard Mitigation Plan.

General descriptions completed for the following hazards.

1. Dam Failure
2. Drought
3. Earthquake/Geological
4. Erosion–Hurricane/Nor'easter/Coastal Storm
5. Extreme Temperature–Cold
6. Extreme Temperature–Heat
7. Flood
8. Hail
9. Hazardous Materials Release–Fixed Site
10. Hazardous Materials Release–Transportation
11. High Wind–Straight-Line Winds
12. High Wind–Tornado
13. Ice Storm
14. Landslide (non-seismic)
15. Levee Failure
16. Losses, Crops
17. Losses, Fishing
18. Severe Storm–Lightning
19. Severe Storm–Winter Weather
20. Storm Surge−Hurricane/Nor'easter/Coastal Storm
21. Wildfire

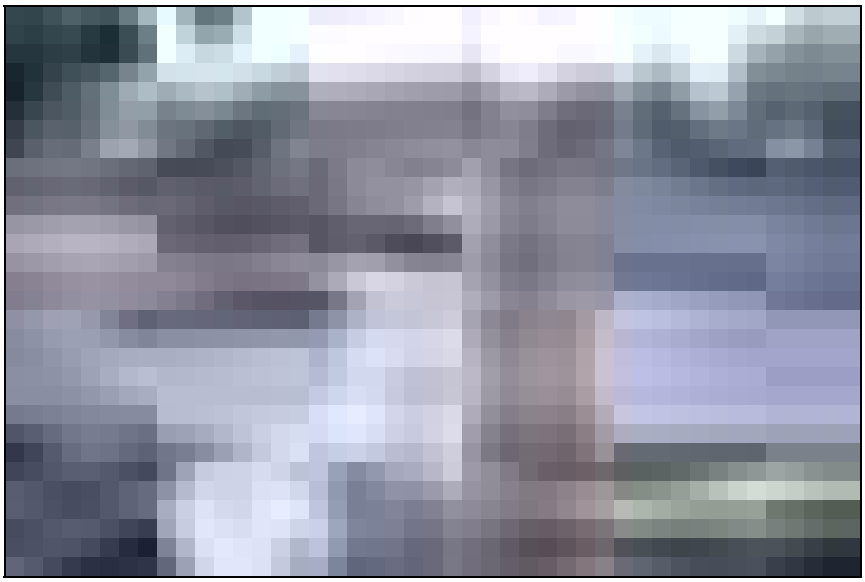
D-1 Dam Failure

D-1.1 Definition of Dam Failure Hazard

A dam is defined by the New Jersey Department of Environmental Protection (NJDEP) as any artificial dike, levee, or other barrier, which is constructed for the purpose of impounding water on a permanent or temporary basis, that raises the water level 5' or more above the usual, mean, low water height when measured from the downstream toe-of-dam to the emergency spillway crest or, in the absence of an emergency spillway, the top-of-dam.[1]

A dam failure can be defined as the unintended release or surge of impounded water. A failure can cause significant property damage, injury, and in some cases death downstream of where the dam failed. The severity of a dam failure can also vary widely. There is the potential for total collapse of a dam, but less significant failures are more likely as a result of a overtopping (inadequate spillway design, debris blockage), foundation defects, or seepage. Overtopping of a dam during a flood event due to clogged debris has the potential to be catastrophic. In 1972 the Dam Failure in Rapid South Dakota occurred after the Canyon Lake Dam became clogged with debris and the dam was overtopped.[2]

Figure D-1.1-1
Canyon Lake Dam Failure in 1972
(Source: USGS)



D-2.2 Characteristics of Dam Failure

Dam failures can result from a variety of causes including lack of maintenance, seismic activity, improper design or construction, or during large storm events. Significant rainfall can quickly inundate an area and cause

[1] NJDEP. Retrieved from http://www.nj.gov/dep/
[2] USGS. Retrieved from http://www.usgs.gov/

floodwaters to overwhelm a reservoir. If the spillway of the dam cannot safely pass the resulting flows, water will begin flowing in areas not designed for such flows and failure may occur.[3]

Intense storms may produce a flood in a few hours or even minutes for upstream locations. Flash floods can occur within several hours of the beginning of heavy rainfall, and dam failure may occur within hours of the first signs of breaching. Other failures can take much longer to occur, from days to weeks, as a result of debris jams or the accumulation of melting snow.[4]

[3] NJDEP. Retrieved from http://www.nj.gov/dep/
[4] NJDEP. Retrieved from http://www.nj.gov/dep/

D-2 Drought

D-2.1 Definition of Drought Hazard

A drought is an extended dry climate condition when there is not enough water to support urban, agricultural, human, or environmental water needs. It usually refers to a period of below-normal rainfall, but can also be caused by drying bores or lakes, or anything that reduces the amount of liquid water available. Drought is a recurring feature of nearly all the world's climatic regions.

Drought is the result of a decline in the expected precipitation over an extended period of time, typically one or more seasons in length. Meteorological drought is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales. Hydrological drought is related to the effects of precipitation shortfalls on streamflows and reservoir, lake, and groundwater levels. Agricultural drought is defined principally in terms of soil moisture deficiencies relative to water demands of plant life, usually crops. Socioeconomic drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. This may also be called a water management drought.

Figure D-2.1-1
Boy Wheeling Water During Drought
(Source: FEMA)

D-2.2 Characteristics of Drought

Drought produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services. Impacts are commonly referred to as direct or indirect. Reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock, and wildlife mortality rates; and damage to wildlife and fish habitat are a few examples of direct impacts. The consequences of these impacts illustrate indirect impacts. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, reduced tax revenues because of

reduced expenditures, increased crime, foreclosures on bank loans to farmers and businesses, migration, and disaster relief programs.

Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering effects of an event. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.

Droughts may cause a shortage of water for human and industrial consumption and cause a decrease in hydroelectric power. Water quality may also decline while the number and severity of wildfires may increase. Severe droughts may result in the loss of agricultural crops and forest products, undernourished wildlife and livestock, lower land values, and higher unemployment.

D-3 Earthquake/Geological

D-3.1 Definition of Earthquake Hazard

An earthquake is "…a sudden motion or trembling caused by an abrupt release of accumulated strain in the tectonic plates that comprise the earth's crust." These rigid plates, known as tectonic plates, are some 50 to 60 miles in thickness and move slowly and continuously over the earth's interior. The plates meet along their edges, where they move away from or pass under each other at rates varying from less than a fraction of 1" up to 5" inches per year. While this sounds small, at a rate of 2" per year, a distance of 30 miles would be covered in approximately 1 million years. [5] Figure D-3.1-1 shows a USGS seismic probability map for the continental United States

Figure D-3.1-1
United States Earthquake Zones
(Source: USGS)

D-3.2 Characteristics of Earthquakes

The vibration or shaking of the ground during an earthquake is described by ground motion. Severity of ground motion generally increases with the amount of energy released and decreases with distance from the fault or epicenter of the earthquake. Ground motion causes waves in the earth's interior, also known as seismic waves, and along the earth's surface, known as surface waves. The following are the two kinds of seismic waves:

- P (primary) waves are longitudinal or compressional waves similar in character to sound waves that cause back-and-forth oscillation along the direction of travel (vertical motion), with particle motion in the same direction as wave travel. They move through the earth at approximately 15,000 mph.
- S (secondary) waves, also known as shear waves, are slower than P waves and cause structures to vibrate from side-to-side (horizontal motion) due to particle motion at right-angles to the direction of wave travel. Unreinforced buildings are more easily damaged by S waves.

[5] FEMA, 1997.

- Earthquakes are often relatively short duration, but there may be aftershocks and other effects (such as liquefaction) that prolong and exacerbate their effects. The potential for either of these effects depends on local conditions and other technical factors that are not discussed in this Plan.

There is some potential for seismic activity virtually anywhere on the earth. Locations that are close to tectonic faults, however, are much more likely to be impacted by earthquakes than other places. The United States Geologic Survey (USGS) and other organizations develop maps to indicate the relatively probability of earthquakes in particular areas.

Figure D-3.2-1
Earthquake Damage
(Source: FEMA)

D-4 Erosion

(Including Hurricane/Nor'easter/Coastal Storm)

D-4.1 Definition of Erosion

Coastal erosion is the wearing away of land or the removal of beach or dune sediments by wave action, tidal currents, wave currents, wind, or drainage. Coastal erosion is a dynamic process that is constantly occurring at varying rates along the coasts and shorelines of the United States. Numerous factors can influence the severity and rate of coastal erosion including human activities, tides, the possibility of rising sea levels, and the frequency and intensity of hurricanes. Strong storms and hurricanes can erode large sections of coastline with a single event. The process of coastal erosion results in permanent changes to the shape and structure of the coastline. Human activities such as poor land use practices and boating activities can also accelerate the process of coastal erosion.

D-4.2 Characteristics of Erosion

Coastal erosion is a dynamic process that is constantly occurring at varying rates along the coasts and shorelines of the United States. Numerous factors can influence the severity and rate of coastal erosion including human activities, tides, the possibility of rising sea levels, and the frequency and intensity of hurricanes. Strong storms and hurricanes can erode large sections of coastline with a single event. The process of coastal erosion results in permanent changes to the shape and structure of the coastline. Human activities such as poor land use practices and boating activities can also accelerate the process of coastal erosion.

Billions of dollars of economic development are potentially threatened by the impacts of coastal erosion. In a report to Congress in the year 2000, FEMA estimated that erosion may cost property owners along the coast $500 million a year in structural damages and loss of land. The report also stated as many as 87,000 residential homes may be at risk of eroding into the oceans or Great Lakes over the next 60 years.

Coastal erosion is a significant problem along the entire Louisiana Gulf Coast. The barrier islands and marshes of Louisiana provide protection for inland development during hurricanes. These islands act as a buffer and help to reduce the intensity of hurricanes as they make landfall prior to reaching more densely populated areas such as New Orleans. Tides and strong storms moving onshore from the Gulf of Mexico are eroding Louisiana's marshy coastline at an alarming rate. Erosion of several of the barrier islands, which lie offshore of the estuaries and wetlands that buffer and protect these important ecosystems from the open marine environment, exceeds 20 meters/year.

On the west coast powerful winter storms during El Nino years can cause considerable erosion along sections of the Pacific coastline. El Nino winters can include more frequent storms, large waves, and extreme high tides. Along the pacific coastline, erosion can lead to flooding, collapsed bluffs, destroyed houses and closed roads.

Figure D-4.2-1
Coastal Erosion in Pacifica, California During El Nino Year in 1998

(Source: USGS)

D-5 Extreme Temperature−Cold

D-5.1 Definition of Extreme Temperature (Cold)

The extreme cold hazard can be defined as temperatures that are significantly below normal. The severity of extreme temperature events are measured by temperature, duration and humidity. Most events are of less than a week in duration but can occasionally last for longer periods up to several weeks.

A cold wave is classified as a rapid drop of 20˚F, to below between 28˚F and 10˚F depending on the time of year and whether the drop occurs in the southern or northern half of the state, within a 24-hour period. When this occurs, outdoor industrial, commercial, agricultural, and social activity must be curtailed or additional precautions taken.

D-5.2 Characteristics of Extreme Temperature (Cold)

The consequences of extreme cold on humans are intensified by high winds which increase the rate of heat loss and has the effect of making it feel colder than the actual air temperature. Wind chills can make extreme cold temperatures even more dangerous. Very strong winds combined with temperatures slightly below freezing can have the same chilling effect as a temperature nearly 50˚F lower in a calm atmosphere. Arctic explorers and military experts have developed what is called the *wind-chill factor*, which calculates an equivalent calm-air temperature for the combined effects of wind and temperature. In effect, the index describes the cooling power of air on exposed flesh and to a lesser extent a clothed person. Wind-chill temperatures throughout New Jersey annually fall below zero a number of times each winter.

At very cold temperatures, the most serious concern is the risk of hypothermia or dangerous overcooling of the body. Extreme cold temperatures combined with high winds can lead to frostbite or freezing of the exposed extremities such as fingers, toes, nose and ear lobes. Hypothermia could be fatal in absence of immediate medical attention.

Cold weather injuries are summarized as follows:

- Frostnip: The freezing of the top layers of skin tissue and is normally reversible. It mostly affects the cheeks, earlobes, fingers, and toes. Symptoms include numbness, top layer of skin feeling hard and rubbery, but deeper tissue is soft. Skin becomes waxy.
- Frostbite: The actual freezing of the tissue and/or body part. Ice crystals form inside the skin that can destroy the tissues, potential for losing skin or part of a finger, toe, or foot. Frostbite affects the ears, nose, fingers, and toes most often. Superficial frostbite includes all layers of skin, and deep frostbite can include freezing of muscle and/or bone. Symptoms include skin that is white and has a *wooden* feel all the way through.
- Hypothermia: The general cooling of the body. When the body drops much below the normal temperature of 98.6˚F, serious problems can arise. Severe hypothermia can lead to death. Symptoms of mild hypothermia include uncontrolled shivering, numbness of hands, and the inability to complete tasks with hands. At the point of severe hypothermia shivering stops, a person is unable to walk, and pulse and respiration rates decrease.

D-6 Extreme Temperature−Heat

D-6.1 Definition of Extreme Temperature (Heat)

Extreme summer heat is the combination of very high temperatures and exceptionally humid conditions. If such conditions persist for an extended period of time, it is called a heat wave.[6] Heat stress can be indexed by combining the effects of temperature and humidity, as shown in Table D-6.1-1. The index estimates the relationship between dry bulb temperatures (at different humidity) and the skin's resistance to heat and moisture transfer. The higher the temperature or humidity, the higher the apparent temperature.

Table D-6.1-1
Heat Index and Disorders
(Sources: FEMA, 1997; NWS, 1997)

Danger Category		Heat Disorders	Apparent Temperatures (°F)
IV	Extreme Danger	Heatstroke or sunstroke imminent.	>130
III	Danger	Sunstroke, heat cramps, or heat exhaustion likely; heat stroke possible with prolonged exposure and physical activity.	105-130
II	Extreme Caution	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and physical activity.	90-105
I	Caution	Fatigue possible with prolonged exposure and physical activity.	89-90

In the northeastern United States, periods of warmer than normal temperatures typically occur several times a summer. Extreme heat waves may occur about once every five years or so where maximum daily temperatures exceed 100˚F for an extended period of time. The passing of a cold front usually moderates temperatures after a few days to a week.

D-6.2 Characteristics of Extreme Temperature (Heat)

The main impact of extreme heat is its affect on the human body. In a very hot environment, the most serious concern is heat stroke. In absence of immediate medical attention, heat stroke could be fatal. Heat stroke fatalities do occur every summer. Heat exhaustion and fainting (syncope) are less serious types of illnesses which are not fatal but interfere with a person's ability to work.

The major human risks associated with extreme heat can be summarized as follows.

- Heatstroke: Considered a medical emergency, heatstroke is often fatal. It occurs when the body's responses to heat stress are insufficient to prevent a substantial rise in the body's core temperature. While no standard diagnosis exists, a medical heatstroke condition is usually diagnosed when the body's temperature exceeds 105°F due to environmental temperatures. Rapid cooling is necessary to prevent death, with an average fatality rate of 15 percent even with treatment.
- Heat Exhaustion: While much less serious than heatstroke, heat exhaustion victims may complain of dizziness, weakness, or fatigue. Body temperatures may be normal or slightly to moderately elevated. The prognosis is usually good with fluid treatment.

[6] FEMA, 1997.

- Heat Syncope: This refers to sudden loss of consciousness and is typically associated with people exercising who are not acclimated to warm temperatures. Causes little or no harm to the individual.
- Heat Cramps: May occur in people unaccustomed to exercising in the heat and generally ceases to be a problem after acclimatization.

D-7 Flood

D-7.1 Definition of Flood Hazard

Flooding is the accumulation of water within a water body (e.g., stream, river, lake, or reservoir) and the overflow of excess water onto adjacent floodplains. As illustrated in Figure D-7.2-1, floodplains are usually lowlands adjacent to water bodies that are subject to recurring floods. Floods are natural events that are considered hazards only when people and property are affected. Nationwide, hundreds of floods occur each year, making them one of the most common hazards in the United States.[7] There are a number of categories of floods in the United States, including the following:

- Riverine flooding, (river channel, flash floods, alluvial fan floods, ice-jam floods, dam breaks)
- Local drainage or high groundwater levels
- Fluctuating lake levels
- Coastal flooding, including storm surges
- Debris flows
- Subsidence

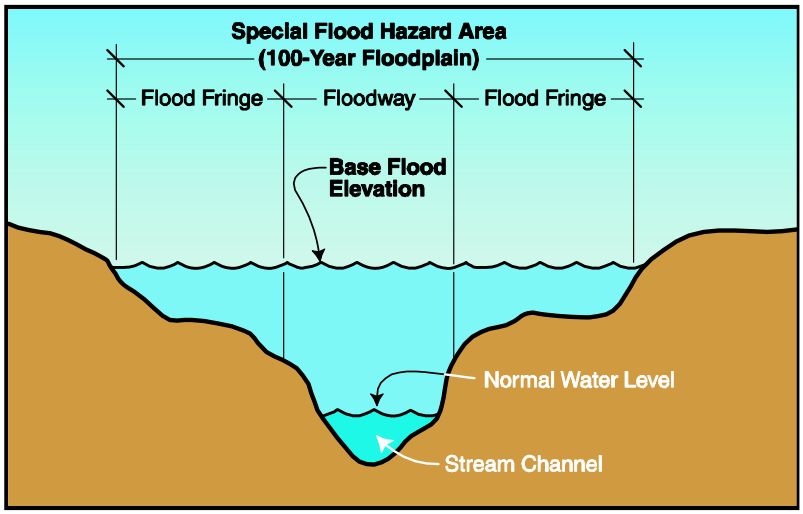
D-7.2 Characteristics of Floods

While there is no sharp distinction between riverine floods, flash floods, alluvial fan floods, ice jam floods, and dam-break floods, these types of floods are widely recognized and may be helpful in considering the range of flood risk and appropriate responses. The most common kind of flooding event is riverine flooding, also known as overbank flooding. Riverine flooding occurs as a result of excess rainfall or rapid snowmelt causing the overflow of rivers, streams, and lakes. This type of flooding occurs when the flow of rainwater runoff is greater than the carrying capacities of the natural drainage systems. There are several types of riverine floods, including headwater, backwater, interior drainage, and flash flooding.

Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions, to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. In steep valleys, flooding is usually rapid and deep, but of short duration, while flooding in flat areas is typically slow, relatively shallow, and may last for long periods of time.

[7] FEMA, 1997.

Figure D-7.2-1
Floodplain Definition
(Source: FEMA, August 2001)



Flash floods involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage that includes the tearing out of trees, undermining of buildings and bridges, and scouring new channels. The intensity of flash flooding is a function of the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and floodplain. Dam failure and ice jams may also lead to flash flooding.

Alluvial fan floods occur in the deposits of rock and soil that have eroded from mountainsides and accumulated on valley floors in the pattern of a fan. Alluvial fan floods often cause greater damage than overbank flooding due to the high velocity of the flow, amount of debris, and broad area affected. Human activities may exacerbate flooding and erosion on alluvial fans via increased velocity along roadways acting as temporary drainage channels or changes to natural drainage channels from fill, grading, and structures.

Ice jam flood occur when an upstream part of a river thaws first (possibly because it flows away from the equator), and the ice gets carried downstream into the still-frozen part. Masses of ice can become lodged under bridges and other weirs, causing an ice dam, flooding areas upstream of the jam. After the ice dam breaks apart, the sudden surge of water that breaks through the dam can then flood areas downstream of the jam. While this usually occurs in spring, it can happen as winter sets in when the downstream part becomes frozen first. Dam-break floods may occur due to structural failures (e.g., progressive erosion), overtopping or breach from flooding, or earthquakes.

Local drainage floods may occur outside of recognized drainage channels or delineated floodplains for a variety of reasons, including concentrated local precipitation, a lack of infiltration, inadequate facilities for drainage and stormwater conveyance, and/or increased surface runoff. Such events often occur in flat areas, particularly during winter and spring where the ground is frozen. Drainage floods are found also in urbanized areas with large impermeable surfaces. High groundwater flooding is a seasonal occurrence in some areas, but may occur in other areas after prolonged periods of above-average precipitation.

D-8 Hail

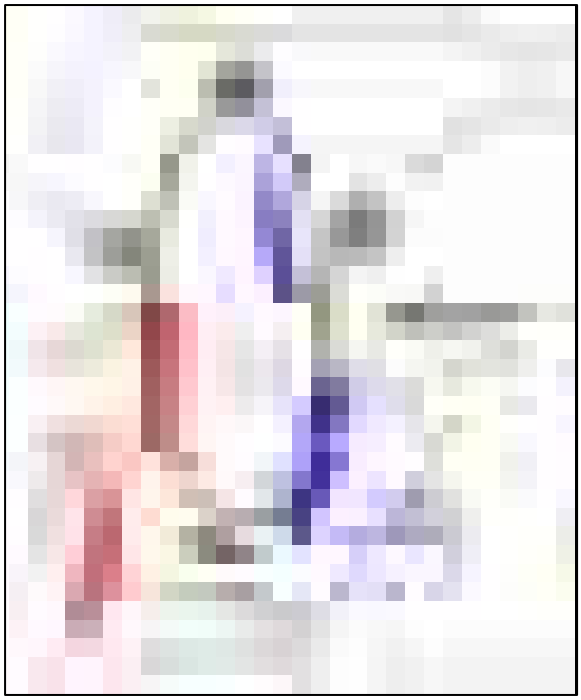
D-8.1 Definition of Hailstorm Hazard

Hail is defined as balls or pieces of ice falling as precipitation from a thunderstorm. Known as hailstones, these ice balls typically range from 5 mm-50 mm in diameter on average, with much larger hailstones forming in severe thunderstorms. The size of hailstones is a direct function of the severity and size of the storm.

D-8.2 Characteristics of Hail

Hail is an outgrowth of severe thunderstorms and develops within a low-pressure front as warm air rises rapidly in to the upper atmosphere and is subsequently cooled, as shown in Figure D-8.2-1, leading to the formation of ice crystals. These are bounced about by high-velocity updraft winds and accumulate into frozen droplets, falling as precipitation after developing enough weight.[8] The National Weather Service (NWS) defines severe thunderstorms as those with downdraft winds in excess of 58 mph and/or hail at least .75" in diameter. While only about 10% of thunderstorms are classified as severe, all thunderstorms are dangerous because they produce numerous dangerous conditions, including one or more of the following: hail, strong winds, lightning, tornadoes, and flash flooding.

Figure D-8.2-1
How Hail Is Formed
(Source: NOAA)



[8] FEMA, 1997.

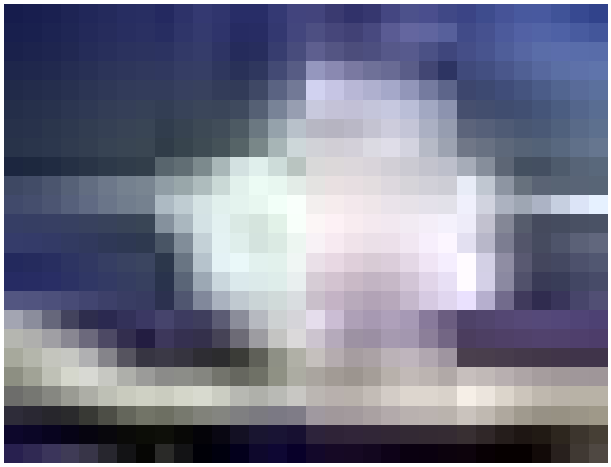
Hailstorms occur most frequently during the late spring and early summer. During this period, extreme temperature changes occur from the surface up to the jet stream, resulting in the strong updrafts required for hail formation.

The size of hailstones varies and is related to the severity and size of the thunderstorm that produced it. The higher the temperatures at the Earth's surface, the greater the strength of the updrafts, and the greater the amount of time the hailstones are suspended, giving the hailstones more time to increase in size. Hailstones vary widely in size, as shown in Table D-8.2-1. Note that penny size (.75" in diameter) or larger hail is considered severe.

Table D-8.2-1
Estimating Hail Size
(Source: NOAA)

Size	Inches in Diameter
Pea	.75 inch
Marble/mothball	.75 inch
Dime/Penny	.75 inch
Nickel	.875 inch
Quarter	1 inch
Ping-Pong Ball	1.5 inches
Golf Ball	1.75 inches
Tennis Ball	2.5 inches
Baseball	2.75 inches
Tea Cup	3 inches
Grapefruit	4 inches
Softball	4.5 inches

Figure D-8.2-2
Large Hailstone
(Source: NOAA)



D-9 Hazardous Materials Release–Fixed Site

D-9.1 Definition of the Hazardous Materials Release–Fixed Site Hazard

Hazardous materials come in the form of explosives, flammable, and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in plants. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines. This section deals those hazardous materials that occur at facilities are which are known as fixed site. The next section, D-10 deals with hazardous materials as they relate to transportation routes (off-site).

D-9.2 Characteristics of Hazardous Materials Release–Fixed Site

Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States, from major industrial plants to local dry cleaning establishments or gardening supply stores. Although there are a number of Federal laws that regulate hazardous materials, including: the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Resource Conservation and Recovery Act of 1976, the Hazardous Materials Transportation Act, the Occupational Safety and Health Act, the Toxic Substances Control Act, and the Clean Air Act, accidents can and do happen.

Incidents related to the release of hazardous materials can occur as a result of human carelessness, technological failure, intentional acts, and natural hazards. When caused by natural hazards, these incidents are known as secondary hazards, whereas intentional acts are terrorism. Hazardous materials releases, depending on the substance involved and type of release, can directly cause injuries and death and contaminate air, water, and soils.

While the probability of a major release at any particular facility or at any point along a known transportation corridor is relatively low, the consequences of releases of these materials can be very serious.

In 1986, Congress passed SARA. Title III of this legislation requires that each community establish a Local Emergency Planning Committee (LEPC) to be responsible for developing an emergency plan for preparing for and responding to chemical emergencies in that community. This emergency plan must include the following: an identification of local facilities and transportation routes where hazardous material are present; the procedures for immediate response in case of an accident (this must include a community-wide evacuation plan); a plan for notifying the community that an incident has occurred; the names of response coordinators at local facilities; and a plan for conducting exercises to test the plan. The plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The LEPC is required to review, test, and update the plan each year.

D-10 Hazardous Materials Release–Transportation

D-10.1 Definition of the Hazardous Materials Release–Transportation Hazard

Hazardous materials release−transportation incidents refer to uncontrollable releases of hazardous materials during transport, which pose a risk to the health, safety, property, and the environment. Small-scale incidents–those that require a response and implementation of evacuation procedures or other protective actions−are somewhat common along major US highways, but can also occur through other modes of transportation including rail, water transport (shipping and ferries), air, and pipelines.

D-10.2 Characteristics of Hazardous Materials Release–Transportation

As described in section D-9, hazardous materials come in the form of explosives, flammable, and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in plants. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines.

Data collected by the United States Department of Transportation (USDOT) in Table D-10.2-1 below shows that transportation related hazardous materials incidents are much more likely to occur on highways than through any other mode of transportation.

Table D-10.2-1
Hazardous Material Incidents by Transportation Mode Totals, 1998-2007
(Source: Hazardous Materials Information System, USDOT)

Mode of Transportation	Number of Incidents	Associated Deaths	Associated Injuries	Damages
Air	13,558	0	152	$2,486,833
Highway	146,425	124	1,542	$446,482,507
Railway	8,633	17	1,101	$176,044,545
Water	280	0	20	$3,862,240
Total	**168,896**	**141**	**2,815**	**$628,876,125**

A one-mile radius around major transportation routes is often delineated as areas of risk if a hazardous materials incident occurs on a roadway. This demonstrates that residents and businesses near these roadways are also at risk, as chemical spills on transportation routes can impact the immediate vicinity via land, water, or air. However, incidents are not contained to these areas. There are often secondary impacts on the community following such an incident, including significant traffic congestion due to closed roadways.

D-11 High Winds–Straight-Line Winds

(Includes Hurricane, Nor'easter, Tropical Storm, and other Severe Storm)

D-11.1 Definition of the Wind Hazard

Wind is the uneven horizontal movement of air resulting from the irregular heating of the earth's surface. It can range from local breezes produced by heat from land surfaces and lasting tens of minutes to powerful global winds resulting from solar heating of the earth. Severe winds typically result from hurricanes, nor'easters, tropical storms, tornadoes, thunderstorms, or winter storms.

Hurricanes, tropical storms, and typhoons, collectively known as tropical cyclones, are among the most devastating naturally occurring hazards in the United States. They present flooding, storm surge, and high wind hazards to the communities that they impact. A hurricane is defined as a low-pressure area of closed circulation winds that originates over tropical waters. A hurricane begins as a tropical depression with wind speeds below 39 mph. As it intensifies, it may develop into a tropical storm, with further development producing a hurricane. Table D-11.1-1 below identifies the criteria for each stage of development.

Table D-11.1-1
Hurricane Development
(Source: NOAA-Hurricane Basics)

Stage of Development	Criteria
Tropical Depression (development)	Maximum sustained surface wind speed is < 39 mph
Tropical Storm	Maximum sustained surface wind speed ranges from 39 mph-<74 mph
Hurricane	Maximum sustained surface wind speed is at least 74 mph
Tropical Depression (dissipation)	Decaying stages of a cyclone in which maximum sustained surface wind speed has dropped below 39 mph

Hurricanes develop from tropical cyclones, which are any type of tropical system that achieves a rotation to it. Three types of tropical cyclones that increase in intensity follow:

1. Tropical Depression. A tropical system that is made up of a large cluster of thunderstorms and has wind speeds between 23 mph and 39mph. If a tropical depression gathers strength, it can become a tropical storm.
2. Tropical Storm. Any type of tropical system with a notable rotation and wind speeds between 39 mph and 74 mph. When a tropical storm forms, the National Hurricane Center (NHC) assigns it a predetermined name. If a tropical storm continues to gather strength, it will become a hurricane.
3. Hurricane. When a tropical cyclone gains winds in excess of 74 mph, the storm is considered a hurricane. Hurricanes are made up of different sections, all with different wind intensity.

A nor'easter is an intense low pressure system that typically occurs during the winter months and affects the coastal areas of the northeast United States and Atlantic Canada. More specifically, it describes a low pressure area, where the center of rotation is just off the coast and whose leading winds in the left forward quadrant rotate onto land from the northeast. The precipitation pattern is similar to other extra-tropical storms. These events can also cause coastal flooding, coastal erosion, and gale force winds.

D-11.2 Characteristics of Wind

Hurricanes and tropical storms are categorized based on their wind speed. Both bring strong winds and are characterized by torrential rain that often results in widespread damage. Hurricanes can produce both extreme high winds and heavy rains. Tropical storms are most often associated with heavy rains that have the potential to produce severe flooding.

As shown in Table D-11.2-1, the Saffir/Simpson Hurricane Scale is used to classify storms by numbered categories. Hurricanes are classified as Categories 1 through 5 based on central pressure, wind speed, storm surge height, and damage potential.

Table D-11.2-1
Saffir/Simpson Hurricane Scale
(Source: NOAA)

Storm Category	Central Pressure	Sustained Winds	Storm Surge	Potential Damage
1	> 980 mbar	74 mph-95 mph	4 ft-5 ft	Minimal
2	965 mbar-979 mbar	96 mph-110 mph	6 ft-8 ft	Moderate
3	945 mbar-964 mbar	111 mph-130 mph	9 ft-12 ft	Extensive
4	920 mbar-944 mbar	131 mph-155 mph	13 ft-18 ft	Extreme
5	< 920 mbar	> 155 mph	> 18 ft	Catastrophic

Hurricane winds blow in a large spiral around a relative calm center known as the *eye*. The eye is generally 20 to 30 miles wide, and the storm may extend outward 400 miles. As a hurricane approaches, the skies will begin to darken and winds will grow in strength. As a hurricane nears land, it can bring torrential rains, high winds, storm surges, and severe flooding. A single hurricane can last for more than two weeks over open waters and can run a path across the entire length of the eastern seaboard. August and September are peak months during the hurricane season that lasts from June 1 through November 30.

High winds from Hurricanes and Tropical Storms are capable of imposing large lateral (horizontal) and uplift (vertical) forces on buildings. Residential buildings can suffer extensive wind damage when they are improperly designed and constructed and when wind speeds exceed design levels. The effects of high winds on a building will depend on several factors:

- Wind speed (sustained and gusts) and duration of high winds
- Height of building above the ground
- Exposure or shielding of the building (by topography, vegetation, or other buildings) relative to wind direction
- Strength of the structural frame, connections, and envelope (walls and roof)
- Shape of building and building components
- Number, size, location, and strength of openings (windows, doors, vents)
- Presence and strength of shutters or opening protection
- Type, quantity, velocity of windborne debris

Proper design and construction of residential structures, particularly those close to water or near the coast, demand that every factor mentioned above be addressed. Failure to do so may result in building damage or destruction by wind.

Figure D-11.1-1
Strong Wind Effects
(Source: FEMA)

D-12 High Wind−Tornado

D-12.1 Definition of Tornado Hazard

A tornado is a rapidly rotating funnel (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most tornadoes do not touch the ground, but when the lower tip of a tornado touches the earth, it can cause extensive damage. Tornadoes often form in convective cells such as thunderstorms or at the front of hurricanes. Tornadoes may also result from earthquake induced fires, wildfires, or atomic bombs.[9] The formation of tornadoes from thunderstorms is explained in Figure D-12.2.

D-12.2 Characteristics of Tornadoes

Tornadoes in the dissipating stage can appear like narrow tubes, or ropes, twisting into all manner of curls, twists, and s-shapes. These tornadoes, such as the one pictured in Figure D-12.2-2, are *roping out*, or becoming a *rope tornado*. Multiple-vortex tornadoes can appear as a family of swirls circling a common center, or may be completely obscured by condensation, dust, and debris, appearing to be a single funnel. In addition to these appearances, tornadoes may be obscured completely by rain or dust. These tornadoes are especially dangerous, as even experienced meteorologists might not spot them.

As shown in the following table, tornadoes are measured by the Fujita Scale, an empirical system that determines the severity by observed damages (last column).

Table D-12.2-1
The Fujita Tornado Scale
(Source: FEMA, 1997)

Category	Wind Speed	Description of Damage
F0	40 mph-72 mph	Light damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73 mph-112 mph	Moderate damage. The lower limit is the beginning of hurricane speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
F2	113 mph-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	158 mph-206 mph	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
F4	207 mph-260 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	261 mph-318 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100-yards; trees debarked.

[9] FEMA, 1997.

Figure D-12.2-1 illustrates the frequency of tornado strikes in the United States per 1,000 square miles. While tornadoes can occur in any month and at all hours of the day or night, they occur with greatest frequency during the late spring and early summer months during late afternoon and early evening hours.

Figure D-12.2-1
Historic Tornado Activity in the United States,
Summary per 1,000 Square Miles
(Source: NOAA)

The severity and duration of tornadoes is a function of several factors, including weather conditions, topography, and the F class of the event. As noted earlier, tornado severity is measured with the Fujita scale, an empirical system that classifies events after they occur. In some cases there are anomalous patterns for various reasons (including the reliability and completeness of reporting), but generally speaking smaller events are more probable, larger (more severe) ones are less likely.

Tornado duration is usually relatively short, varying from a matter of seconds to several minutes on the ground, although in rare cases they can last significantly longer. The path width of a single tornado generally is less than 0.6 miles. The path length of a single tornado can range from a few hundred yards to miles. A tornado typically moves at speeds between 30 mph and 125 mph and can generate internal winds exceeding 300 mph.

Most tornadoes take on the traditional appearance of a narrow funnel, a few hundred yards across, with a small cloud of debris near the ground. Tornadoes can appear, however, in all manner of shapes and sizes.

Figure D-12.2-2
Formation of Tornadoes
(Source: NOAA)

Small, relatively weak landspouts might only be visible as a small swirl of dust on the ground. While the condensation funnel may not extend all the way to the ground, if associated surface winds are greater than 40 mph (64 km/h), it is considered a tornado. Large single-vortex twisters, often violent, can look like a large wedge stuck into the ground, and are known as *wedge tornadoes* or *wedges*. Wedges can be so wide that they appear to be a block of dark clouds. Even experienced storm observers may not be able to tell the difference between a low-hanging cloud and a wedge tornado from a distance.

D-13 Ice Storm

D-13.1 Definition of Ice Storm Hazard

An ice storm is defined as a storm characterized by falling freezing liquid precipitation. The term ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. The frozen precipitation falls as freezing rain and forms ice accumulations usually greater than .25" thick that potentially cause extremely dangerous driving conditions and significant damage. Significant accumulations of ice can pull down trees and utility lines resulting in loss of power and communication.

When ice accumulations are anticipated to exceed .5" to .25" (depending on the state) the NWS will issue an ice storm warning.

Figure D-13.1-1
Split Tree Caused by Ice Storm
(Source: FEMA)

D-13.2 Characteristics of Ice Storms

Although snow is the weather phenomenon most commonly associated with winter, ice storms are a much greater winter menace. The freezing rain that coats all objects in a sheath of ice can cause power outages, structural damage, damaging tree falls. Ice storms occur when rain droplets fall through freezing air and but do not freeze until they touch objects such as trees, roads, or structures. A clear icy sheath, known as a glaze, forms around branches, structures and wires and has been known to bring down high-tension utility, radio, and television transmission towers. Communications and power can be disrupted for days while utility companies work to repair the extensive damage. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.[10]

When air temperatures are only slightly below freezing at the surface, elevated structures such as bridges and overpasses will freeze first. This can make driving conditions extremely hazardous. As the surface temperature lowers to around 30˚F or lower, the freezing rain will begin coating all objects.

[10] NWS. Retrieved from http://www.nws.noaa.gov/

D-14 Landslide (non-seismic)

D-14.1 Definition of Landslide Hazard

A landslide is a natural geologic process involving the movement of earth materials down a slope, including rock, earth, debris, or a combination of these, under the influence of gravity. However, there are a variety of triggers for landslides such as: a heavy rainfall event, earthquakes, or human activity. The rate of landslide movement ranges from rapid to very slow. A landslide can involve large or small volumes of material. Material can move in nearly intact blocks or be greatly deformed and rearranged. The slope may be nearly vertical or fairly gentle.[11]

D-14.2 Characteristics of landslides

Landslides are usually associated with mountainous areas but can also occur in areas of generally low relief. In low-relief areas, landslides occur due to steepening of slopes: as cut and fill failures (roadway and building excavations), river bluff failures, collapse of mine waste piles, and a wide variety of slope failures associated with quarries and open-pit mines.[12]

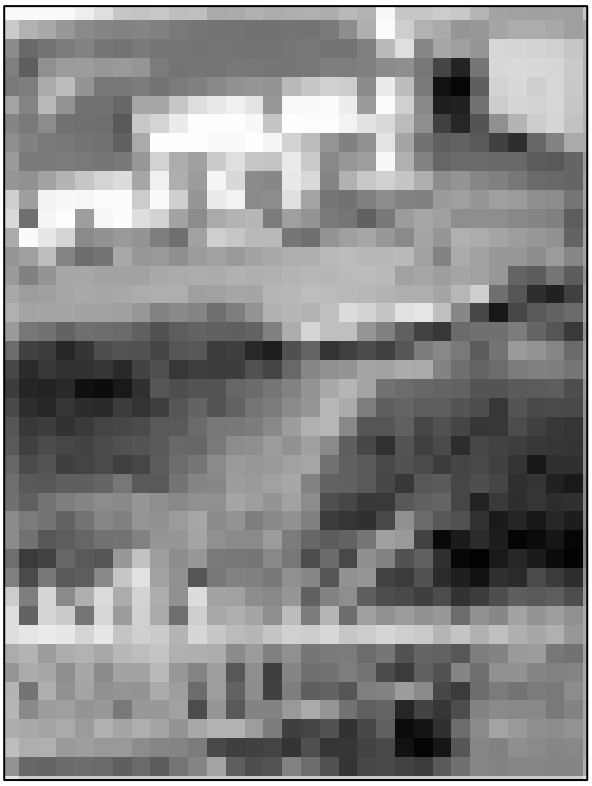


Figure D-14.2-1
Small landslide in a residential area in New Jersey

[11] Delano and Wilshusen, 2001.
[12] USGS, Landslide Types and Process, 2004.

D-15 Levee Failure

D-15.1 Definition of Levee Failure Hazard

A levee is a natural or artificial slope or wall, either earthen or concrete, and often parallels the course of a river. The main purpose of a man made levee is to prevent flooding to adjacent development or farmland. Engineered levees are typically reinforced with concrete and rip-rap to prevent erosion or failure.

Levee failure can occur in numerous ways but the most common is the breaching a levee. A breach occurs when part of the levee breaks away, leaving a large opening for water to flood the land protected by the levee. A breach can be a sudden or gradual failure that is caused either by surface erosion or by a subsurface failure of the levee. Failure can also occur when water overtops the crest of a levee. This is known as overtopping where floodwaters exceed the lowest crest of a levee, flooding the surrounding area. Prolonged overtopping can compromise the levee by undermining and eroding the foundation potentially causing a complete breach.

D-15.2 Characteristics of Levee Failure

A system of levees can be used to protect a community from flooding. Perhaps the most complex system of levees is in the City of New Orleans where several hundred miles of levees have been constructed and maintained by the US Army Corps of Engineers (USACE) to protect against rising floodwaters from the Mississippi River and storm surge from the Gulf of Mexico. In August of 2005 the storm surge from Hurricane Katrina caused sudden and catastrophic failure of numerous levees that protected the City of New Orleans from flooding. Figure D-15.2-1 shows one of the worst levee breaches that occurred along the Industrial Canal after Katrina.

Figure D-15.2-1
Industrial Canal; South Breach at the Lower Ninth Ward; Emergency Closure
(Source: Preliminary Report on the Performance of New Orleans Levee System in Hurricane Katrina)

The USACE is currently in the process of surveying and inspecting over 2000 levees in the United States as part of the development of a National Levee Database. The levees included in this initial survey are: (1) federally owned and maintained; (2) federally built and locally maintained; and (3) locally built and maintained and meet specified USACE standards. The National Levee Database will allow access to critical information for nearly 14,000 miles of federal levees and will also be used to support the National Flood Insurance Program.[13]

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[13] USACE. Retrieved from http://www.usace.army.mil/

D-16 Losses, Crops

D-16.1 Definition of Crop Loss Hazard

Crop loss can be defined as the lowering of yields from both natural hazard events such as drought, hail, or floods. Losses can also occur from a variety of plant diseases and insect infestation. Unfavorable weather conditions and pest infestation can undermine the diligent efforts of even the most experienced farmer, damaging, or destroying fruits and vegetables, and lowering yields.

D-16.2 Characteristics of Crop Loss

Weather related crop loss occurs as a secondary result from events such as drought, extreme temperatures, flooding, high wind events (hurricanes and tornadoes) frost, and hail. If the extent of crop loss is severe enough for a region, the Governor can request federal agriculture disaster aid. This program is administered by the Farm Service Agency (FSA) under the United States Department of Agriculture (USDA). FSA administers and manages farm disaster and loan programs as outlined by Congress through a network of federal, state, and county offices.

To reduce the risk of crop loss many farmers purchase crop insurance. Federal crop insurance is available through the USDA's Risk Management Program. The program is designed to protect crop producers from unavoidable risks associated with adverse weather, plant diseases, and insect infestations. A producer who chooses to purchase an insurance policy must do so by an administratively determined deadline date, which varies by crop and usually coincides with the planting season. Crop insurance is available for more than 60 crops.[14]

[14] USDA. Retrieved from http://www.usda.gov/wps/portal/usdahome

D-17 Losses, Fishing

D-17.1 Definition of Fishing Losses

Commercial fishing is considered the harvesting of fish for sale or trade. Fishing losses occur when harvest yields drop below average. A variety of factors can result in fishing losses including natural population cycles, poor water quality, oil spills, and overharvesting.

Fish losses along the Delaware River can result from water quality degradation due to a variety of causes including industrial and municipal effluent discharges, untreated storm sewer overflow, nutrient enrichment, agricultural runoff, and land use changes.[15]

D-17.2 Characteristics of Fishing Losses

There are five major commercial fishing ports on New Jersey's coastline and a number of smaller ports on Delaware, Barnegat and Raritan Bays. With the exception of Atlantic City, each supports a number of inshore and offshore fisheries. New Jersey's commercial fishermen, harvest between $70 and $100 million worth of finfish and shellfish in New Jersey fishing ports every year. These landings generate on the order of a half-a-billion dollars of economic activity in New Jersey's coastal communities each year.[16]

While a number of fishing techniques are employed by commercial fishermen, there are four major categories that include netting, dredging, trapping/pots, and hook fisheries. New Jersey's commercial fisheries range from traditional, inshore operations like clam tonging, to ocean-spanning ventures targeting species far off the New Jersey coastline. Their harvest, from ocean-fresh live clams, lobsters and oysters to processed and quick-frozen convenience dishes like clam strips, can be marketed locally or shipped to all of the major international seafood markets.

[15] The Delaware Estuary–Environmental Protection Agency Case Study.
[16] Retrieved from FishingNJ.org

D-18 Severe Storm−Lightning

D-18.1 Definition of Lightning

Lightning is a powerful natural electrostatic discharge produced during a thunderstorm. This abrupt electric discharge is accompanied by the emission of visible light and other forms of electromagnetic radiation. The electric current passing through the discharge channels rapidly heats and expands the air into plasma producing acoustic shock waves (thunder) in the atmosphere.

Lightning, which occurs during all thunderstorms, can strike anywhere. Generated by the buildup of charged ions in a thundercloud, the discharge of a lightning bolt interacts with the best conducting object or surface on the ground. The air in the channel of a lightning strike reaches temperatures higher than 50,000˚ F. The rapid heating and cooling of the air near the channel causes a shock wave, which produces thunder.

D-18.2 Characteristics of Lightning

Lightning typically occurs as a by-product of a thunderstorm. The action of rising and descending air in a thunderstorm separates positive and negative charges, with lightning the result of the buildup and discharge of energy between positive and negative charge areas. Water and ice particles may also affect the distribution of the electrical charge. In only a few millionths of a second, the air near a lightning strike is heated to 50,000°F, a temperature hotter than the surface of the sun. Thunder is the result of the very rapid heating and cooling of air near the lightning that causes a shock wave.

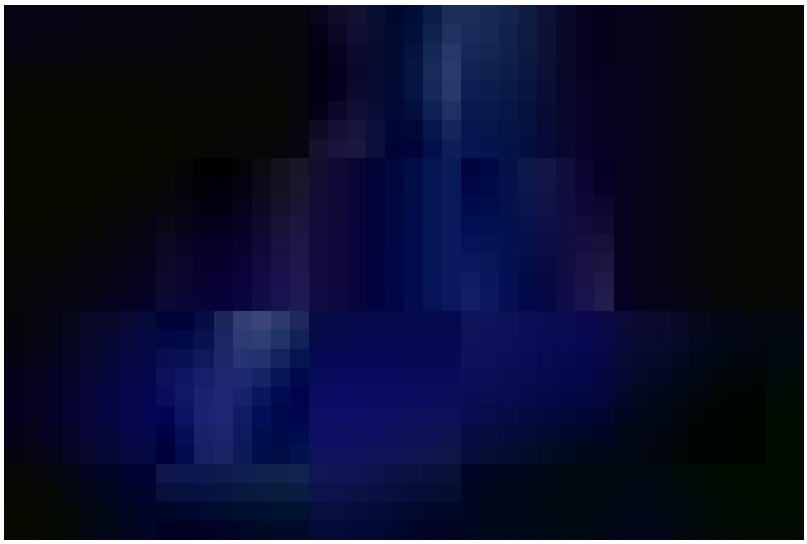
Figure D-18.2-1
Formation of Lightning
(Source: University Corporation for Atmospheric Research)

The hazard posed by lightning is significantly underrated. High winds, rainfall, and a darkening cloud cover are the warning signs for possible cloud-to-ground lightning strikes. While many lightning casualties happen at the beginning of an approaching storm, more than half of lightning deaths occur after a thunderstorm has passed. The lightning threat diminishes after the last sound of thunder, but may persist for more than 30 minutes. When thunderstorms are in the area, but not overhead, the lightning threat continues to exist. Lightning has been known to strike more than 10 miles from the storm in an area with clear sky above.

Lightning is the most dangerous and frequently encountered weather hazard that most people in the United States experience annually. Lightning is the second most frequent killer due to a weather hazard in the United Sates, behind floods and flash floods, with nearly 100 deaths and 500 injuries annually. These numbers are likely to underestimate the actual number of casualties because of the under reporting of suspected lightning deaths and injuries. Cloud-to-ground lightning can kill or injure people by either direct or indirect means.

According to the National Oceanic and Atmospheric Administration (NOAA), an average of 20 million cloud-to-ground flashes has been detected every year in the continental United States. About half of all flashes have more than one ground strike point, so at least 30 million points on the ground are struck on average each year. In addition, there are roughly five to 10 times as many cloud-to-cloud flashes as there are to cloud-to-ground flashes. [17]

Figure D-18.2-2
Lightning Bolt in Night Sky
(Source: FEMA)



Cloud-to-ground lightning is nearly always associated with thunderstorms and related weather phenomena. Thunderstorms occur in most warm and hot months, and occasionally at other times as well. The entire planning area is subject to the lightning hazard. While the duration of individual lightning strikes is only milliseconds, the duration of thunderstorms that create the lightning ranges from very short periods (15 minutes or less) to long periods when the storms are relatively stationary.

Damages from lightning hazards are generally limited to those related to power surges and contact with electrical equipment. In some cases ungrounded structures are hit by lightning and experience damage, either as a direct result of the lightning or via fires secondary to the hazard. There are also reports of brushfires being started by lightning, although these are usually relatively small and quickly contained. No reliable database or information exists to determine the cost of recovery from lightning.

[17] NOAA. July 7, 2003.

D-19 Severe Storms−Winter Weather

D-19.1 Definition of the Winter Weather Hazard

Winter weather can produce storm events where the dominant type of precipitation only occur at cold temperatures, such as snow or sleet, or a rainstorm where ground temperatures are cold enough to allow ice to form (i.e. freezing rain). In temperate continental climates, these storms are not restricted to the winter season, and may occur in the late autumn and early spring. Also, there are very rare occasions when they form in summer, although it would have to be an abnormally cold summer, such as the summer of 1816 in the northeast United States. In many locations in the northern hemisphere, the most powerful winter storms usually occur in March and, in regions where temperatures are cold enough, April.

The following descriptions provide the commonly used definitions of winter storms:

- Winter storm. A storm with significant snowfall, ice, and/or freezing rain; the quantity of precipitation varies by elevation.
    - Non-mountainous areas - heavy snowfall is 4" or more in a 12-hour period, or 6" or more in a 24-hour period
    - Mountainous areas - 12" or more in a 12-hour period or 18" or more in a 24-hour period
- Blizzard. A storm with considerable falling and/or blowing snow combined with sustained winds or frequent gusts of 35 mph or greater that frequently reduces visibility to less than one-quarter mile.

D-19.2 Characteristics of Winter Weather

Winter weather typically forms along a front generally following the meandering path of the jet stream. These storms, called mid-latitude cyclones or extra-tropical cyclones, differ from hurricanes, in that they move from west to east as opposed to east to west. These weather patterns carry cold air from Canada and the Rockies into the southern United States. The origins of the weather patterns that cause winter storms in Louisiana are affected by differences in temperature and pressure, moisture availability, and wind direction as well as weather systems in the Atlantic Ocean and Gulf of Mexico.

Winter storms vary in size and strength and include heavy snowstorms, blizzards, freezing rain, sleet, ice storms and blowing and drifting snow conditions. Extremely cold temperatures accompanied by strong winds can result in wind chills that cause bodily injury such as frostbite and death. Severe winter and ice storms can cause unusually heavy rain or snowfall, high winds, extreme cold, and ice storms throughout the continental United States.

NOAA describes the jet streams that carry storm systems across the United States as narrow bands of strong wind in the upper atmosphere that follow the boundaries between hot and cold air masses. These boundaries are most pronounced during the winter months, when the jet streams travel to their southernmost position over the United States and surrounding water.

The trajectory of the storm center, whether it passes close to the New Jersey coast or at a distance, largely determines both the intensity and the duration of the snowfall over the state. The zone of heaviest snowfall across New Jersey usually occurs in the southwest-to-northeast strip about 150 miles wide, approximately parallel to the path of the storm center, and about 125 and 175 miles northwest of it. If the center passes well offshore, only the

southern part of New Jersey receives substantial snowfall. When the track passes close to shore, warm air from the ocean is drawn into the surface circulation, resulting in rain falling over southern New Jersey and snow over the rest of the state. Often, a passing storm center brings rain to the south, mixed precipitation to central sections and snow to the north.

Winter storm occurrences tend to be very disruptive to transportation and commerce. Trees, cars, roads, and other surfaces develop a coating or glaze of ice, making even small accumulations of ice extremely hazardous to motorists and pedestrians. The most prevalent impacts of heavy accumulations of ice are slippery roads and walkways that lead to vehicle and pedestrian accidents; collapsed roofs from fallen trees and limbs and heavy ice and snow loads; and felled trees, telephone poles and lines, electrical wires, and communication towers. As a result of severe ice storms, telecommunications and power can be disrupted for days. Such storms can also cause exceptionally high rainfall that persists for days, resulting in heavy flooding.

D-20 Storm Surge

(Including Hurricane/Nor'easter/Coastal Storm)

D-20.1 Definition of Storm Surge Hazard

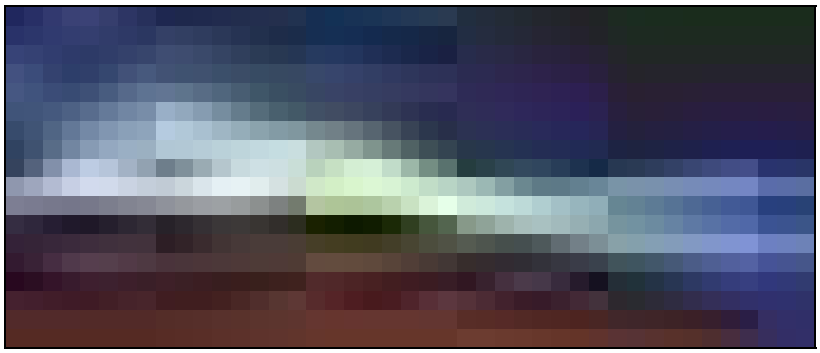
Storm Surge is defined as the onshore rush of sea or lake water caused primarily by the high winds that are associated with a landfalling hurricane, typhoon, or tropical cyclone and secondarily by the low pressure of the storm. Storm surge is simply water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level 15' or more. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides.[18]

D-20.2 Characteristics of Storm Surge

Storm surges are characterized by several factors that allow the displacement of water from oceans, bays or rivers to travel so far inland. Much of the coastlines along the Atlantic and Gulf Coast lie less than 10' above mean sea level. These coastal areas are also densely populated making the danger from storm tides a major concern to life and property. As shown in Figure D-20.2-.1, the level of surge in a particular area is also determined by the slope of the continental shelf. A shallow slope off the coast will allow a greater surge to inundate coastal municipalities.

Municipalities with a steeper continental shelf will not see as much surge inundation, although large breaking waves can still present major problems. Storm tides, waves, and currents in confined harbors have the potential to severely damage ships, marinas, and pleasure boats.[19]

Figure D-20.2-1
Storm Surge
(Source: NOAA)



One tool used to evaluate the threat from storm surge is the Sea, Lake and Overland Surges from Hurricanes (SLOSH) Model. SLOSH is a computerized model run by the NHC to estimate storm surge heights and winds resulting from historical, hypothetical, or predicted hurricanes by taking into account:

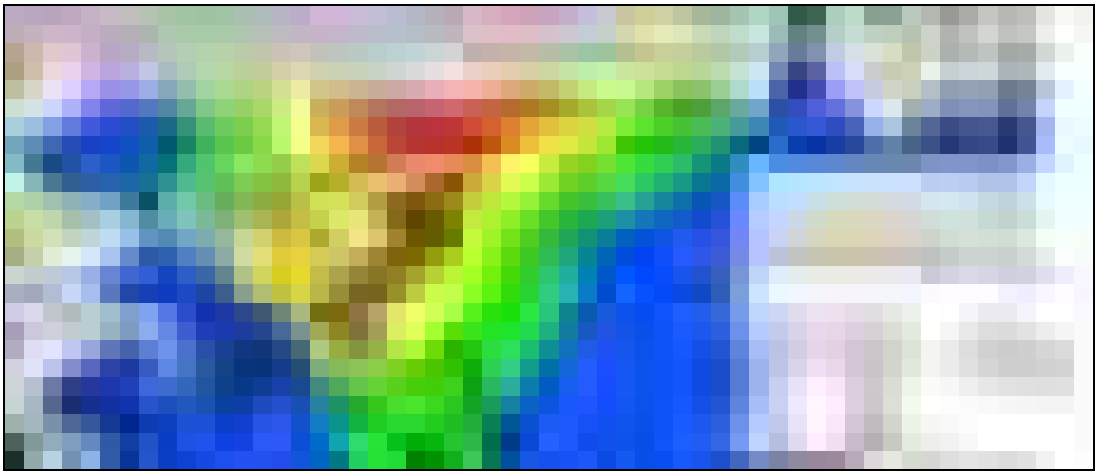
- Pressure
- Size

[18] NOAA. Retrieved from http://www.noaa.gov/
[19] NOAA. Retrieved from http://www.noaa.gov/

- Forward speed
- Track
- Winds

Graphical output from the model displays color coded storm surge heights for a particular area in feet above the model's reference level, the National Geodetic Vertical Datum, which is the elevation reference for most maps. Emergency managers often use the data produced from the SLOSH model to assist with determining which areas must be evacuated in advance of an approaching hurricane.

Figure D-20.2-2
Hurricane Katrina SLOSH Model
(Source: NOAA–National Hurricane Center)



D-21 Wildfire

D-21.1 Definition of Wildfire Hazard

A wildfire, also known as a forest fire, vegetation fire, grass fire, brush fire, or hill fire, is an uncontrolled fire often occurring in wildland areas, which can also consume houses or agricultural resources. Common causes include lightning, human carelessness, and arson. Wildfires are fueled by naturally occurring or non-native species of trees, brush, and grasses. Topography, fuel, and weather are the three principal factors that impact wildfire hazards and behavior.

Figure D-21.1-1
Urban Interface Fire
(Source: NOAA)

D-21.2 Characteristics of Wildfires

Wildfires often begin unnoticed, spread quickly, and are usually signaled by dense smoke that may fill the area for miles around. As mentioned, wildfires can be human-caused through acts such as arson or campfires, or can be caused by natural events such as lightning. Wildfires can be categorized into three types:

1. Wildland fires occur in very rural areas and are fueled primarily by natural vegetation.
2. Interface fires occur in areas where homes or other structures are endangered by the wildfires. The fires are fueled by both natural vegetation and man-made structures. These are often referred to as Wildland Urban Interface fires.
3. Firestorms occur during extreme weather (e.g., high temperatures, low humidity, and high winds) with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change or the fuel is exhausted.

The following three factors contribute significantly to wildfire behavior:

Fuel: The type of fuel and the fuel loading (measured in tons of vegetative matter per acre) have a direct impact on fire behavior. Fuel types vary from light fuels (grass) to moderate fuels (southern rough) to heavy fuels (slash). The type of fuel and the fuel load determines the potential intensity of the wildfire and how much effort must be expended to contain and control it.

Weather: The most variable factor affecting wildfire behavior is weather. Important weather variables are precipitation, humidity, and wind. Weather events ranging in scale from localized thunderstorms to large cold fronts can have major effects on wildfire occurrence and behavior. Extreme weather, such as extended drought and low humidity can lead to extreme wildfire activity.

Topography; Topography can have a powerful influence on wildfire behavior. The movement of air over the terrain tends to direct a fire's course.

Appendix E
Tabulations

Contents of this Appendix

E.1 Hazardous Materials Sites

The complete tabular data regarding fixed-site hazardous materials in Gloucester County is presented below, to augment the information contained in Section 6.

Beginning in 1986, as part of the Emergency Planning and Community Right-to-know Act (EPCRA), certain industries as well as federal facilities have been required to report the locations and quantities of chemicals stored on-site to state and local governments in order to help communities prepare to respond to chemical spills and similar emergencies. EPCRA Section 313 requires the United States Environmental Protection Agency (EPA) and the states to annually collect data on releases and transfers of certain toxic chemicals from industrial facilities, and make the data available to the public as part of the Toxics Release Inventory (TRI).[1] In 1990 Congress passed the Pollution Prevention Act which required that additional data on waste management and source reduction activities be reported under the TRI program.

For Gloucester County, the TRI database was queried for the years 2000 through 2006, the most recent year available. For years 2000 through 2006, the results of the query are summarized in Table 6.3.9-7. The total onsite and offsite disposal or releases is reported in pounds, and includes facilities for all industries and chemicals in Gloucester County.

The details of the TRI database query for 2006 are provided below in Table E.1-1. The table includes the facility address, type of chemical disposed or released, and the quantity of on and off-site releases. The Gloucester County results for 2006 have been included as sample, the details for other years can be found by querying the TRI Explorer database within the EPA's website. To query the database, navigate to the EPA-TRI home page located at http://www.epa.gov/tri and select "Get TRI Data" from the menu on the left side of the page. Then select the link "TRI Explorer", and "Facility" from the reports menu.

[1] EPA-TRI Program. Retrieved from http://www.epa.gov/tri/

Table E.1-1
Gloucester County Toxic Release Inventory for 2006
On-site and Off-site Reported Disposed of or Otherwise Released (in pounds)
(Source: USEPA–Toxic Release Inventory Database)

Facility Address	Chemical Name	Total On-site Disposal or Other Releases (Pounds)	Total Off-site Disposal or Other Releases (Pounds)	Total On- and Off-site Disposal or Other Releases (Pounds)
600 ELLIS ROAD, GLASSBORO, NJ	AMMONIA	4,455	0	4,455
	METHANOL	9,813	0	9,813
	PROPYLENE OXIDE	NA	NA	NA
	TOTAL	**14,268**	**0**	**14,268**
A LINE ROAD, GIBBSTOWN, NJ	AMMONIA	12,592	0	12,592
675 BILLINGSPORT ROAD, PAULSBORO, NJ	DIISOCYANATES	6	0	6
	ETHYLENE GLYCOL	NA	NA	NA
	FORMIC ACID	NA	NA	NA
	TOLUENE DIISOCYANATE (MIXED ISOMERS)	247	0	247
	TOTAL	**253**	**0**	**253**
838 N DELSEA DRIVE, CLAYTON, NJ	TOLUENE	127	0	127
2000 NOLTE DRIVE, PAULSBORO, NJ	ETHYLENE GLYCOL	5	0	5
4 PARADISE ROAD, PAULSBORO, NJ	BENZENE	500	0	500
	BENZO(G,H,I)PERYLENE	0	0	0
	CYCLOHEXANE	500	0	500
	ETHYLBENZENE	500	0	500
	LEAD	0	3	3
	N-HEXANE	5,453	0	5,453
	POLYCYCLIC AROMATIC COMPOUNDS	2	0	2
	XYLENE (MIXED ISOMERS)	500	0	500
	TOTAL	**7,455**	**3**	**7,459**
286 MANTUA GROVE ROAD, WEST DEPTFORD, NJ	DIISOCYANATES	NA	NA	NA
	TOLUENE-2,4-DIISOCYANATE	NA	NA	NA
2115 HIGH HILL ROAD, LOGAN TOWNSHIP	1,2,4-TRIMETHYLBENZENE	NA	NA	NA
	ETHYLENE GLYCOL	NA	NA	NA
	LITHIUM CARBONATE	NA	NA	NA
480 DEMOCRAT ROAD, GIBBSTOWN, NJ	FORMALDEHYDE	NA	NA	NA
	METHANOL	13,500	0	13,500
	ZINC COMPOUNDS	0	3,550	3,550
	TOTAL	**13,500**	**3,550**	**17,050**

Facility Address	Chemical Name	Total On-site Disposal or Other Releases (Pounds)	Total Off-site Disposal or Other Releases (Pounds)	Total On- and Off-site Disposal or Other Releases (Pounds)
1001 BILLINGSPORT ROAD, PAULSBORO, NJ	ZINC COMPOUNDS	12	193	205
ROUTE 130 SOUTH, BRIDGEPORT, NJ	AMMONIA	4,380	0	4,380
	BENZAL CHLORIDE	203	0	203
	BENZYL CHLORIDE	2,800	0	2,800
	CHLORINE	35	0	35
	CHLOROETHANE	44,047	0	44,047
	HYDROCHLORIC ACID (1995 AND AFTER 'ACID AEROSOLS' ONLY)	354	0	354
	N-BUTYL ALCOHOL	28,600	0	28,600
	PERACETIC ACID	353	0	353
	PHENOL	1,430	0	1,430
	PHTHALIC ANHYDRIDE	5,810	0	5,810
	PROPYLENE OXIDE	650	0	650
	TOLUENE	24,870	0	24,870
	TRIETHYLAMINE	13,200	0	13,200
	TOTAL	**126,732**	**0**	**126,732**
200 N REPAUNO AVENE, GIBBSTOWN, NJ	AMMONIA	10,068	0	10,068
	NITRIC ACID	NA	NA	NA
	SODIUM NITRITE	32,305	0	32,305
	TOTAL	**42,373**	**0**	**42,373**
50 N MARKET STREET, GIBBSTOWN, NJ	ACETOPHENONE	9	0	9
	CUMENE	17,600	0	17,600
	CUMENE HYDROPEROXIDE	33	0	33
	PHENOL	1	0	1
	TOTAL	**17,643**	**0**	**17,643**
700 MID ATLANTIC PARKWAY, THOROFARE, NJ	COPPER	0	3,345	3,345
	LEAD	0	18,718	18,718
	TOLUENE	25,025	0	25,025
	TOTAL	**25,025**	**22,063**	**47,088**
920 KINGS HIGHWAY, WOODBURY, NJ	1,2,4-TRIMETHYLBENZENE	354	0	354
	BENZENE	51	0	51
	BENZO(G,H,I)PERYLENE	0	0	0
	CUMENE	10	0	10
	CYCLOHEXANE	636	0	636
	ETHYLBENZENE	393	0	393
	LEAD	0	0	0
	METHYL TERT-BUTYL ETHER	11	0	11

Facility Address	Chemical Name	Total On-site Disposal or Other Releases (Pounds)	Total Off-site Disposal or Other Releases (Pounds)	Total On- and Off-site Disposal or Other Releases (Pounds)
	N-HEXANE	354	0	354
	NAPHTHALENE	5	0	5
	POLYCYCLIC AROMATIC COMPOUNDS	0	0	0
	TERT-BUTYL ALCOHOL	20	0	20
	TOLUENE	2,120	0	2,120
	XYLENE (MIXED ISOMERS)	1,924	0	1,924
	TOTAL	**5,878**	**0**	**5,878**
175 OGDEN ROAD, MANTUA, NJ	2-PHENYLPHENOL	.	.	0
	POLYCHLORINATED ALKANES	.	.	0
2001 NOLTE DRIVE, WEST DEPTFORD, NJ	AMMONIA	1,074	0	1,074
	CHLORINE	420	0	420
	CHROMIUM COMPOUNDS(EXCEPT CHROMITE ORE MINED IN THE TRANSVAAL REGION)	NA	NA	NA
	COPPER COMPOUNDS	0	63	63
	DICHLOROMETHANE	748	0	748
	HYDRAZINE	4	0	4
	HYDROCHLORIC ACID (1995 AND AFTER 'ACID AEROSOLS' ONLY)	11,887	0	11,887
	MERCURY	0	0	0
	METHANOL	530	0	530
	METHYL ISOBUTYL KETONE	9	0	9
	N-BUTYL ALCOHOL	1,108	0	1,108
	NICKEL COMPOUNDS	NA	NA	NA
	NITRATE COMPOUNDS	0	0	0
	NITRIC ACID	0	0	0
	SILVER COMPOUNDS	NA	NA	NA
	SULFURIC ACID (1994 AND AFTER 'ACID AEROSOLS' ONLY)	69	0	69
	TOLUENE	57	0	57
	XYLENE (MIXED ISOMERS)	838	0	838
	TOTAL	**16,744**	**63**	**16,807**
ROUTE 55 and 553, PITMAN, NJ	LEAD COMPOUNDS	0	0	0
ROUTE 130 SOUTH, SWEDESBORO, NJ	1,2,4-TRIMETHYLBENZENE	NA	NA	NA
	AMMONIA	322	12,157	12,479
	BARIUM COMPOUNDS	267	27,054	27,321
	DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0

Facility Address	Chemical Name	Total On-site Disposal or Other Releases (Pounds)	Total Off-site Disposal or Other Releases (Pounds)	Total On- and Off-site Disposal or Other Releases (Pounds)
	HYDROCHLORIC ACID (1995 AND AFTER 'ACID AEROSOLS' ONLY)	6,738	0	6,738
	HYDROGEN FLUORIDE	NA	NA	NA
	LEAD COMPOUNDS	4	2,763	2,768
	MERCURY COMPOUNDS	13	145	158
	N-HEXANE	NA	NA	NA
	NAPHTHALENE	NA	NA	NA
	TOTAL	**7,345**	**42,119**	**49,464**
301 MANTUA AVENUE, PAULSBORO, NJ	CERTAIN GLYCOL ETHERS	0	0	0
210 HARMONY ROAD, MICKLETON, NJ	AMMONIA	136,659	13,318	149,977
ROUTE 130 SOUTH, BRIDGEPORT, NJ	CHLORINE	145	0	145
	DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0
	HEXACHLOROBENZENE	3	0	3
	HYDROCHLORIC ACID (1995 AND AFTER 'ACID AEROSOLS' ONLY)	529	0	529
	PHTHALIC ANHYDRIDE	536	0	536
	TOTAL	**1,213**	**0**	**1,213**
10 LEONARD LANE, THOROFARE, NJ	1,1,1-TRICHLOROETHANE	3	200	203
	1,1-DICHLORO-1-FLUOROETHANE	1	0	1
	1-CHLORO-1,1-DIFLUOROETHANE	2,841	0	2,841
	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE	3,027	0	3,027
	CHLORINE	1,349	0	1,349
	HYDROCHLORIC ACID (1995 AND AFTER 'ACID AEROSOLS' ONLY)	7,555	0	7,555
	HYDROGEN FLUORIDE	773	0	773
	TOTAL	**15,549**	**200**	**15,749**
400 NORTH WOODBURY ROAD, PITMAN, NJ	NICKEL	0	0	0
1000 CROWN POINT ROAD, WESTVILLE, NJ	1,2,4-TRIMETHYLBENZENE	250	250	500
	METHYL TERT-BUTYL ETHER	6,057	250	6,307
	N-HEXANE	255	250	505
	TOLUENE	755	250	1,005
	XYLENE (MIXED ISOMERS)	255	250	505
	TOTAL	**7,572**	**1,250**	**8,822**
ROUTE 130 and I-295 SOUTH, WESTVILLE, NJ	1,2,4-TRIMETHYLBENZENE	7,138	2	7,140
	1,3-BUTADIENE	4,854	0	4,854

Facility Address	Chemical Name	Total On-site Disposal or Other Releases (Pounds)	Total Off-site Disposal or Other Releases (Pounds)	Total On- and Off-site Disposal or Other Releases (Pounds)
	AMMONIA	11,535	8,535	20,070
	ANTIMONY	181	2,164	2,345
	BENZENE	9,313	0	9,313
	BENZO(G,H,I)PERYLENE	0	0	0
	CHLORINE	0	0	0
	COBALT	1	1,793	1,793
	CUMENE	32,916	0	32,916
	CYANIDE COMPOUNDS	171,260	5	171,266
	CYCLOHEXANE	3,035	0	3,035
	DIETHANOLAMINE	1,600	0	1,600
	ETHYLBENZENE	6,333	2	6,335
	ETHYLENE	12,364	0	12,364
	ETHYLENE GLYCOL	0	0	0
	LEAD COMPOUNDS	38	457	495
	MERCURY	16	3	19
	METHYL TERT-BUTYL ETHER	16,518	0	16,518
	MOLYBDENUM TRIOXIDE	0	0	0
	N-HEXANE	12,364	0	12,364
	NAPHTHALENE	595	0	595
	POLYCYCLIC AROMATIC COMPOUNDS	2	0	2
	PROPYLENE	30,275	0	30,275
	SULFURIC ACID (1994 AND AFTER 'ACID AEROSOLS' ONLY)	102,954	0	102,954
	TETRACHLOROETHYLENE	0	0	0
	TOLUENE	20,234	5	20,239
	XYLENE (MIXED ISOMERS)	23,843	25	23,868
	TOTAL	**467,369**	**12,990**	**480,359**
800 BILLINGSPORT ROAD, PAULSBORO, NJ	1,2,4-TRIMETHYLBENZENE	703	2,714	3,417
	1,3-BUTADIENE	10	0	10
	AMMONIA	26,736	0	26,736
	BENZENE	13,785	1,633	15,418
	BENZO(G,H,I)PERYLENE	5	0	5
	CARBON DISULFIDE	1,701	0	1,701
	CARBONYL SULFIDE	2,572	0	2,572
	CUMENE	1,414	488	1,902
	CYCLOHEXANE	5,219	5,427	10,646
	DIETHANOLAMINE	0	40	40
	ETHYLBENZENE	3,164	1,086	4,250

Facility Address	Chemical Name	Total On-site Disposal or Other Releases (Pounds)	Total Off-site Disposal or Other Releases (Pounds)	Total On- and Off-site Disposal or Other Releases (Pounds)
	ETHYLENE	579	0	579
	HYDROGEN CYANIDE	38,802	0	38,802
	HYDROGEN FLUORIDE	290	0	290
	LEAD COMPOUNDS	67	120	187
	MERCURY COMPOUNDS	7	0	7
	METHANOL	3,295	0	3,295
	METHYL TERT-BUTYL ETHER	15,315	0	15,315
	MOLYBDENUM TRIOXIDE	0	0	0
	N-HEXANE	11,482	7,598	19,080
	NAPHTHALENE	1,554	4,885	6,439
	NICKEL COMPOUNDS	626	843	1,469
	NITRATE COMPOUNDS	70,185	0	70,185
	PHENOL	8,278	5	8,283
	POLYCYCLIC AROMATIC COMPOUNDS	151	0	151
	PROPYLENE	3,642	0	3,642
	SULFURIC ACID (1994 AND AFTER 'ACID AEROSOLS' ONLY)	97,031	0	97,031
	TETRACHLOROETHYLENE	5	0	5
	TOLUENE	16,954	543	17,497
	VANADIUM COMPOUNDS	108	4,774	4,882
	XYLENE (MIXED ISOMERS)	24,546	5,427	29,973
	TOTAL	**348,226**	**35,583**	**383,809**
GRAND TOTAL		**1,266,540**	**131,333**	**1,397,872**

Note: "NA" in a cell denotes that the facility has submitted only Form A and thus the data for release, waste transfers, or quantities of TRI chemicals in waste are not applicable. By submitting a Form A the facility has certified that its total annual reportable amount is less than 500 pounds, and that the facility does not manufacture, process, or otherwise use more than 1 million pounds of the toxic chemical.

It should be noted that this data changes very often because spills and air releases occur almost constantly. In some cases the information on the EPA TRI web site will be reasonably current, and in others it is advisable to consult with local officials to obtain the best available information. In New Jersey, the Right to know Hazardous Substance List developed under the New Jersey Worker and Right to Know Act may vary from the materials identified by the EPA-TRI database.

E.2 Critical Facilities

In order to develop mitigation actions and risk assessments for critical facilities, a complete geo-referenced Critical Facilities Inventory was developed. The listing was initially built upon several sources:

- Hazards US (HAZUS) critical facility lists
- Mitigation 20/20 worksheets
- Gloucester County OEM critical facilities lists
- Other inputs from county and municipal sources

Then, the Gloucester County OEM and the local coordinators examined the Critical Facilities Inventory and made necessary changes, including: deleting outdated entries, correcting or completing certain data fields, and adding in additional critical facilities, using FEMA's e-grant critical facilities typology as a guide.

The final step in this process was for the local coordinators to examine their comprehensive Critical Facilities Inventory and prioritize their top mitigation candidates, based upon life-safety functions, hazard history, non-redundant function, and other criteria.

Table E.2-1 presents the Gloucester County Critical Facilities Inventory as of August 13, 2008.

Table E.2-1
Gloucester County Critical Facilities Inventory
(Sources: HAZUS, Mitigation 20/20, County and Municipal OEPs, Other Sources)

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Clayton Borough Public Works	Clayton	M/2020	Department of Public Works	(No#) Washington Avenue
Clayton Community Center	Clayton	M/2020	Shelter	720 Washington Avenue
Clayton Elementary School	Clayton	M/2020	Shelter	300 W. Chestnut Street
Clayton Fire House	Clayton	HAZUS/M2020	Fire	101 W. High Street
Clayton High School	Clayton	M/2020	Shelter	350 E. Clinton Street
Clayton Office-Fire Prevention/Police Department	Clayton	HAZUS/M2020	Police	125 N. Delsea Drive
Gloucester County Fire Marshall/Communications	Clayton	HAZUS/M2020	Fire	1200 N. Delsea Drive
Gloucester Count Utility Authority	Clayton	M/2020	Lift Station	Washington and Bernard Street
S&F Propane	Clayton	M/2020	Hazmat	1072 N. Delsea Drive
Aleris Light Aluminum Products	Clayton	HAZUS	Hazmat	838 N. Delsea Drive
Silver Lake Dam	Clayton/Elk	HAZUS	Dam	
St. Catherine's School	Clayton	M/2020	Shelter	51 W. North Street
Wilson Lake Dam	Clayton	HAZUS	Dam	E. Chestnut Street
E. Chestnut Street Water	Clayton	HMP	Water	Evergreen Avenue
Evergreen Avenue Water	Clayton	HMP	Water	Evergreen Avenue
Evergreen Avenue Sewer	Clayton	HMP	Sewer	Center Street
Center Street Sewer	Clayton	HMP	Sewer	Brown Lane

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Brown Lane Sewer	Clayton	HMP	Sewer	Cenco Boulevard
Cenco Boulevard Sewer	Clayton	HMP	Sewer	Wilson Avenue
Wilson Avenue Sewer	Clayton	HMP	Sewer	East Avenue
East Avenue Sewer	Clayton	HMP	Sewer	Borough Avenue
Borough Avenue Sewer	Clayton	HMP	Sewer	
Almonesson Lake Dam	Deptford	HAZUS	Dam	Cooper Street
Almonesson Lake Fire Co	Deptford	HAZUS	Fire	1700 Almonesson Road
Bankbridge Dam	Deptford	HAZUS	Dam	
Blackwood Terrace Firehouse	Deptford	HAZUS/M2020	Fire	2401 Good Intent Road
Board Of Education	Deptford	M/2020		2022 Good Intent Road
Central Early Childhood Development Center	Deptford	M/2020		1447 Delsea Drive
Deptford High School	Deptford	M/2020		575 Fox Run Road
Deptford Mall Complex	Deptford	M/2020		Deptford Center Road
Deptford MUA	Deptford	M/2020		898 Cattell Road
Deptford Cooper Street Station	Deptford	M/2020		Cooper Street and Almonesson Road
Deptford Delsea Drive Station	Deptford	M/2020		1830 Delsea Drive
Deptford Fisher Street Station	Deptford	M/2020		86 Fisher Street
Deptford Mail Avenue Station	Deptford	M/2020		966 Mail Avenue
Deptford Princeton Boulevard Station	Deptford	M/2020		595 Princeton Boulevard
Deptford Tanyard Road Station	Deptford	M/2020		630 Tanyard Road
Fire Department	Deptford	HAZUS/M2020	Fire	1370 Delsea Drive
GCSSS/District Bankbridge Elementary School	Deptford	M/2020		850 Bankbridge Road
GCSSS/District Bankbridge Regional School	Deptford	M/2020		870 Bankbridge Road
Gloucester County College	Deptford	M/2020		1400 Tanyard Road
Gloucester County Institute of Technology	Deptford	M/2020		Po Box 800 Tanyard Road
Gloucester County Office of Education	Deptford	M/2020		1492 Tanyard Road
Good Intent School	Deptford	M/2020		1555 Good Intent Road
Interconnection With NJ American Water Company	Deptford	M/2020		Jarrett Drive Iao Clements Bridge Road
Interconnection With NJ American Water Company	Deptford	M/2020		Princeton Boulevard
Jericho Fire Company	Deptford	HAZUS	Fire	960 Mail Avenue
Lake Tract School	Deptford	M/2020		Iszard Road
Monongahela Middle School	Deptford	M/2020		890 Bankbridge Road
MUA Elevated Storage Tank	Deptford	M/2020		Clements Bridge Road

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
MUA Stand Tank	Deptford	M/2020		Bucknell
MUA Storage Tank	Deptford	M/2020		Almonesson Road
MUA Storage Tank	Deptford	M/2020		Blackwood-Barnsboro Road
MUA Well #1	Deptford	M/2020		Princeton Boulevard Iao Haverford
MUA Well #2	Deptford	M/2020		Princeton Boulevard
MUA Well #4	Deptford	M/2020		Houston and Cobblestone
MUA Well #5	Deptford	M/2020		County House and Indian Trail
MUA Well #6	Deptford	M/2020		Southview Drive
MUA Well #7	Deptford	M/2020		Bankbridge Road
MUA Well #8	Deptford	M/2020		Almonesson Road
Newsharon School	Deptford	M/2020		1810 Delsea Drive
NJ Judiciary Court Division	Deptford	M/2020		1893 Hurffville Road
NJDOT Motor Vehicle Inspection Station	Deptford	M/2020		725 Tanyard Road
NJDOT Yard	Deptford	M/2020		21 Superior Way
Oak Valley School	Deptford	M/2020		525 College Boulevard
Pine Acres School	Deptford	M/2020		720 Purdue Avenue
Police Dept/Municipal Bldg	Deptford	HAZUS/M2020	Police	1011 Cooper
PSE & G Electrical Substation	Deptford	M/2020		Broadway and Cordelia
Public Works	Deptford	M/2020		1700 Hurffville Road
Shady Lane School	Deptford	M/2020		130 Peach Street
US Post Office	Deptford	M/2020		1265 Hurffville Road
GCSSS/District Bankbridge Development Center	Deptford	M/2020		550 Salina Road
Almonesson Lake Fire Department	Deptford	HAZUS	Fire	13 S. Almonesson Road
Warrington Mill Dam	East Greenwich	HAZUS	Dam	
East Green Police	East Greenwich	HAZUS	Police	159 Democratic
Municipal Building	East Greenwich	HMP		
Mount Royal Fire Company	East Greenwich	HAZUS	Fire	5 Mantua Road
US Post Office	East Greenwich	HMP		
Aura School	Elk	M/2020	Shelter	100 Unionville Road
Elk Township Highway Garage	Elk	M/2020		667 Whig Land Road
Elk Township Municipal Building	Elk	M/2020	Police	667 Whig Land Road
Ferrel Volunteer Fire Company	Elk	M/2020	Fire	Route 538 and 641
Lake Garrison Dam	Elk	HAZUS	Dam	
Wrights Mill Dam	Elk	HAZUS	Dam	
Aura Fire Company	Elk	HAZUS/M2020	Fire	909 Aura Road

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Lawns Volunteer Fire Company	Elk	HAZUS/M2021	Fire	220 Stranger Avenue
Janvier Fire	Franklin	M/2020	Fire	3438 Coles Mill Road
Janvier School	Franklin	M/2020	Shelter	Pennsylvania and Coles Mill Roads
Cedar Lake Dam	Franklin	HAZUS	Dam	
Delsea High School/Middle School	Franklin	M/2020	Shelter	242 Fries Mill Road
Franklin Ambulance	Franklin	M/2020		1340 Main Road
Franklin Ambulance	Franklin	M/2020		1672 Coles Mill Road
Franklin Ambulance	Franklin	M/2020		4024 Tuckahoe Road
Franklin Department of Public Works	Franklin	M/2020		234 Broad Street
Franklinville Volunteer Fire	Franklin	HAZUS/M2020	Fire	Delsea Drive and Coles Mill Road
Franklinville Lake Dam	Franklin	HAZUS	Dam	
Iona Lake Dam	Franklin	HAZUS	Dam	
Main Road School	Franklin	M/2020	Shelter	1452 Main Road
Malaga Dam	Franklin	HAZUS	Dam	
Malaga Volunteer Fire	Franklin	M/2020	Fire	604 Main Street
Forest Grove Fire	Franklin	M/2020	Fire	1635 Grove Road
Ruetter School	Franklin	M/2020	Shelter	2150 Delsea Drive
Star Cross Fire	Franklin	M/2020	Fire	4231 Tuckahoe Road
Village Dock Lake Dam	Franklin	HAZUS	Dam	
Franklinville Police Department/Municipal Building	Franklin	HAZUS/M2020	Police	1571 Delsea Drive
Adm Cocoa Products	Glassboro	HAZUS	Hazmat	600 Ellis Road
Glassboro Police Department/ Emergency Management	Glassboro	HAZUS	Police	1 S. Main Street
Glassboro Fire Department	Glassboro	HAZUS	Fire	27 High Street E.
Wadsworth Lake Dam	Glassboro	HAZUS	Dam	
Intermediate School	Glassboro	HMP	Shelter	Delsea Drive
Bowe School	Glassboro	HMP	Shelter	Bowe Boulevard
Bullock School	Glassboro	HMP	Shelter	370 East New Street
Fire House/ Emergency Operation Center	Greenwich	M/2020	Fire/OEM	636 E. Broad Street
Municipal Building	Greenwich	M/2020	Administration	420 Washington Street
Wastewater Treatment	Greenwich	M/2020	Hazmat	(No#) N. School Street
Public Works	Greenwich	M/2020	Hazmat	1200 Memorial Avenue
Repauno Plant	Greenwich	M/2020	Hazmat	200 N. Repauno Avenue
Valero Refinery	Greenwich	M/2020	Hazmat	800 Billingsport Road
Greenwich Township Police Department	Greenwich	HAZUS	Police	421 W Broad Street
Geo-Chemical	Greenwich	HMP	Hazmat	N. Market Street

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Air Products	Greenwich	HMP	Hazmat	Billingsport Road
EMD	Greenwich	HMP	Hazmat	Democrat Road
Broad St School	Greenwich	HMP	Shelter	265 W. Broad Street
Nehaunsey School	Greenwich	HMP	Shelter	415 Swedesboro Road
Air Liquide	Greenwich	HMP	Hazmat	A Line Road
Exxon-Mobil Tech Center	Greenwich	HMP	Hazmat	800 Billingsport Road
Gibbstown Emergency Management Office/Police Department	Greenwich	HAZUS	Emergency Management Agency	421 W. Broad Street
Clearview Regional High School	Harrison	M/2020	Shelter	625 Breakneck Road
Clearview Regional Middle School	Harrison	M/2020	Shelter	595 Jefferson Road
Friends School	Harrison	M/2020		15 High Street
Harmony Fire Company	Harrison	M/2020	Fire	4 S. Main Street
Harrison Township	Harrison	M/2020	EOC	114 Bridgeton Pike
Harrison Township School	Harrison	M/2020	Shelter	20 N. Main Street
Kincaid Lake Dam	Harrison	HAZUS	Dam	
Lake Gilman Dam	Harrison/Elk	HAZUS	Dam	
Mullica Hill Pond Dam	Harrison	HAZUS	Dam	
Pleasant Valley School	Harrison	M/2020	Shelter	401 Cedar Road
Harrison Township Wastewater	Harrison	HMP	Sewer	Woodland Avenue
4H Fairgrounds	Harrison	HMP	Shelter	Bridgeton Pike
Harmony Fire Department	Harrison	HAZUS	Fire	7 S. Main Street
Harrison Police	Harrison	HAZUS	Police	137 N. Main
Harrison Township Fire District/Ewan Fire	Harrison	HAZUS/M2020	Fire	312 Ewan Road
A&M Equipment Company	Logan	M/2020		2777 Old Mans Creek Road
Acme #7943	Logan	M/2020		1619 Center Square Road
Aggreko	Logan	M/2020		2 Hawk Court
Allied Propane Company	Logan	M/2020		159 Floodgate Road
Beckett Diagnostic, LLC	Logan	M/2020		499 Beckett Road
Bridgeport Volunteer Fire Department	Logan	M/2020		4 Steelman Avenue
Camping World	Logan	M/2020		602 Heron Drive
Cardinal Distribution	Logan	M/2020		1120 Commerce Boulevard
Center Square School	Logan	M/2020		100 Peachwood Drive
Custom Building Products	Logan	M/2020		2115 High Hill Road
Delaware Port Authority	Logan	M/2020		
Drugstore.Com	Logan	M/2020		407 Heron Drive
Ferro Corporation	Logan	M/2020		170 Route 130
Genco-Beckton Dickinson	Logan	M/2020		200 Birch Creek Road

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
General Mills	Logan	M/2020		101 Arlington Boulevard
Godwin Pumps	Logan	M/2020		84 Floodgate Road
Hampton Inn	Logan	M/2020		2 Pureland Drive
Holiday Inn Select	Logan	M/2020		1 Pureland Drive
Home Depot D/C	Logan	M/2020		2359 Center Square Road
Ion Beam Applications	Logan	M/2020		303 Heron Drive
Life Care Medical Center	Logan	M/2020		511 Heron Drive
Linens 'n Things	Logan	M/2020		1109 Commerce Boulevard
Logan Emergency Medical Service	Logan	M/2020		49 Coontown Road
Logan Generating Company	Logan	M/2020		76 Route 130
Logan Township Elementary School	Logan	M/2020		110 School Lane
Logan Township Mua	Logan	M/2020		69 Jefferson Lane
Missa Bay Citrus Company	Logan	M/2020		2339 Center Square Road
Missa Bay Citrus Company	Logan	M/2020		3 Mallard Court
Missa Bay Citrus Company	Logan	M/2020		730 Veterans Court
Municipal Building	Logan	M/2020		125 Main Street
NJ American Water Company	Logan	M/2020		1547 High Hill Road
NJ American Water Company	Logan	M/2020		Birch Creek Road
NJDOT- Bridgeport Maintenance Facility	Logan	M/2020		92 Springer Lane
Pierson Materials	Logan	M/2020		848 Oak Grove Road
Rastelli Brothers	Logan	M/2020		200 Heron Drive
Repaupo Volunteer Fire Company	Logan	M/2020		7 Repaupo Station Road
Riverfront Occupational Health	Logan	M/2020		510 Heron Drive
SMS/Penn Jersey Rail Lines	Logan	M/2020		510 Heron Drive
Sun National Bank	Logan	M/2020		6 Village Center Drive
Tech Data	Logan	M/2020		1 Technology Drive
The Bank	Logan	M/2020		22 Village Center Drive
Thomas Scientific	Logan	M/2020		1654 High Hill Road
Uptown Bakeries	Logan	M/2020		2271 High Hill Road
Uptown Bakeries	Logan	M/2020		300 Eagle Court
US Food Service	Logan	M/2020		2255 High Hill Road
US Post Office	Logan	M/2020		2279 Center Square Road
VWR Scientific	Logan	M/2020		2039 Center Square Road
VWR Scientific	Logan	M/2020		405 Heron Drive
Logan Police Department	Bridgeport	HAZUS	Police	125 Main
Hangsterfer's Labs. Inc.	Mantua	HAZUS	Hazmat	175 Ogden Road

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Mantua Police Department	Mantua	HAZUS	Police	405 Main
Mantua Volunteer Fire Company	Mantua	HAZUS	Fire	42 Main Street
J. Mason Tomlin School	Mantua		Shelter	393 Main Street
Centre City School	Mantua		Shelter	301 Columbus Drive
Sewell School	Mantua		Shelter	40 McNally Drive
Barnsboro Fire	Mantua		Fire	721 Main Street
Centre City Fire	Mantua		Fire	Jackson Road
Caines Mill Pond Dam	Monroe	HAZUS	Dam	
Cecil Fire Dept	Monroe	M/2020		295 Whitehall Road
Connect IV Substation	Monroe	M/2020		Clayton Road
Connect Iv Substation	Monroe	M/2020		N. Tuckahoe Road
Cordia Commons and Wellspring	Monroe	M/2020		1640 S. Blackhorse Pike
Cranes Lake Dam	Monroe	HAZUS	Dam	
Diamond Lake Dam	Monroe	HAZUS	Dam	
Holly Glen School	Monroe	M/2020		900 W. Main Street
Meadowview Nursing Home	Monroe	M/2020		1328 S. Blackhorse Pike
Monroe Township EMS	Monroe	M/2020		700 Corkery Drive
Mua Well #5	Monroe	M/2020		Water Street
Mua Well #6	Monroe	M/2020		Lake Avenue
Mua Well #7	Monroe	M/2020		Corkery Lane
Mua Well #8	Monroe	M/2020		Black Horse Pike
Mua Wells #9 & #10	Monroe	M/2020		Tuckahoe Road
Municipal Building	Monroe	M/2020	EOC	125 Virginia Avenue
Oak Knoll School	Monroe	M/2020		Bodine Avenue
Radix School	Monroe	M/2020		Radix Road
Sewer Equalization Tank Station 901	Monroe	M/2020		Melva Lane
Sewer Holding Tank	Monroe	M/2020		Fries Mill Road
Sewer Pump Station 902	Monroe	M/2020		Blackhorse Pike
Sewer Pump Station 903	Monroe	M/2020		Briarwood Drive
Sewer Pump Station 904	Monroe	M/2020		Forest Drive
Sewer Pump Station 905	Monroe	M/2020		Kilburn Drive
Sewer Pump Station 906	Monroe	M/2020		Fredrick Street
Sewer Pump Station 907	Monroe	M/2020		Ettore Drive
Sewer Pump Station 908	Monroe	M/2020		Tara Drive
Sewer Pump Station 909	Monroe	M/2020		Meadow Drive
Sewer Pump Station 910	Monroe	M/2020		Longfellow Drive
Sewer Pump Station 911	Monroe	M/2020		St Thomas Boulevard
Sewer Pump Station 912	Monroe	M/2020		Aberdeen Road

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Sewer Pump Station 913	Monroe	M/2020		N. Shore Drive
Sewer Pump Station 914	Monroe	M/2020		Lake Avenue
Sewer Pump Station 915	Monroe	M/2020		Concord Drive
Sewer Pump Station 916	Monroe	M/2020		Nightshade Drive
Sewer Pump Station 918	Monroe	M/2020		Avondrew
Sewer Pump Station 919	Monroe	M/2020		Berlin Crosskeys Road
Sewer Pump Station 920	Monroe	M/2020		Mills Lane
Sewer Pump Station 921	Monroe	M/2020		Bluebell Road
Sewer Pump Station 922	Monroe	M/2020		Dartmour Road
Sewer Pump Station 923	Monroe	M/2020		Corkery Lane
St. Mary School	Monroe	M/2020		34
Sunset Lake Dam	Monroe	HAZUS	Dam	
Timber Lakes Dam	Monroe	HAZUS	Dam	
Upper Victory Lake Dam	Monroe	HAZUS	Dam	
Victory Lakes #1 Dam	Monroe	HAZUS	Dam	
Whitehall School	Monroe	M/2020		161 Whitehall Road
Williamstown Fire Dept Station #1	Monroe	M/2020		555 S. Main Street
Williamstown Fire Dept Station #2	Monroe	M/2020		1500 Glassbourne Road
Williamstown High School	Monroe	M/2020		700 N. Tuckahoe Road
Williamstown Middle School	Monroe	M/2020		560 Clamton Road
Williamstown Fire Department/Police Department	Monroe	HAZUS	Fire	125 Virginia Avenue
National Park Fire Department	National Park	HAZUS	Fire	523 Hessian Avenue
Newfield Police	Newfield	HAZUS	Police	18 Catawba
Newfield Police	Newfield	HAZUS	Police	18 Catawba
Shieldalloy Metallurgical Corporation	Newfield	HAZUS	Hazmat	West Boulevard
Shieldalloy Metallurgical Corporation	Newfield	HAZUS	Hazmat	West Boulevard
Air Products and Chemicals Inc.	Paulsboro	HAZUS	Hazmat	Billingsport Road
Citgo Asphalt Refining Company	Paulsboro	HAZUS	Hazmat	4 Paradise Road
Dap Inc.	Paulsboro	HAZUS	Hazmat	2000 Nolte Drive
Lilly Industries Inc.	Paulsboro	HAZUS	Hazmat	1991 Nolte Drive
Mobil Oil Corporation Paulsboro Lube Plant	Paulsboro	HAZUS	Hazmat	1001 Billingsport Road
Mobil Oil Paulsboro Terminal	Paulsboro	HAZUS	Hazmat	N. Delaware Street
Nalco Chemical Company	Paulsboro	HAZUS	Hazmat	1927 Nolte Drive
Paulsboro Packaging Inc.	Paulsboro	HAZUS	Hazmat	301 Mantua Avenue
Paulsboro Police	Paulsboro	HAZUS	Police	1211 N Delaware Street

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Department				
Valero Refining Company - NJ	Paulsboro	HAZUS	Hazmat	800 Billingsport Road
Paulsboro Fire Company	Paulsboro		Fire	Swedesboro and Thomson Avenues
Billingsport Fire	Paulsboro		Fire	437 Billingsport Road
St. John's Church	Paulsboro		Shelter	647 Beacon Avenue
St. Paul's Church	Paulsboro		Shelter	Broad and Delaware Street
Alcyon Lake Dam	Pitman	HAZUS	Dam	
Decorating Resources Inc.	Pitman	HAZUS	Hazmat	420 Andbro Drive
Highland Fire Company	Pitman	HAZUS	Fire	109 Woodland Avenue
Pitman Police Department	Pitman	HAZUS	Police	110 S Broadway
Sony Music Entertainment Inc.	Pitman	HAZUS	Hazmat	400 N. Woodbury Road
Pitman Fire Co 1	Pitman	HMP	Fire	1 Commerce Avenue
Pitman Fire Patrol	Pitman	HMP	Fire	213 West Avenue
Pitman High School	Pitman	HMP	Shelter	225 Linden Avenue
Pitman Middle School	Pitman	HMP	Shelter	138 East Holly Avenue
WCK Walls School	Pitman	HMP	Shelter	320 Grant Avenue
Memorial School	Pitman	HMP	Shelter	420 Hudson Avenue
Kindle School	Pitman	HMP	Shelter	211 Washington Avenue
BASF Corporation	Washington	HAZUS	Hazmat	Pershing and Pleasantview Avenues
Esbjornson Gymnasium	Glassboro	HMP	Shelter	201 Mullica Hill Road
Chamberlain Student Center	Glassboro	HMP	Shelter	201 Mullica Hill Road
Student Recreation Center	Glassboro	HMP	Shelter	201 Mullica Hill Road
Wilson Hall	Glassboro	HMP	Shelter	201 Mullica Hill Road
Bole Annex	Glassboro	HMP	Police	201 Mullica Hill Road
Bole Administration	Glassboro	HMP	EOC	201 Mullica Hill Road
Student Health Center	Glassboro	HMP	EMS	201 Mullica Hill Road
Powerhouse	Glassboro	HMP	Power	201 Mullica Hill Road
Bozarth Hall	Glassboro	HMP	Communications	201 Mullica Hill Road
Harrisonville Dam	South Harrison	HAZUS	Dam	
South Harrison School	South Harrison	M/2020	Shelter	904 Mullica Hill Road
Harrisonville Fire Department	South Harrison		Fire	30 Main Street
South Harrison Municipal Building Complex	South Harrison		Police, EMS, EOC	Mullica Hill Road
Biochemical Sciences Inc.	Swedesboro	HAZUS	Hazmat	200 Commodore Drive
Narraticon Lake Dam	Swedesboro	HAZUS	Dam	
Oldmans Township Fire Department	Swedesboro	HAZUS	Fire	46 Main Street
PG&E Corporation Logan	Swedesboro	HAZUS	Hazmat	Route 130 Street

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Generating Plant				
Pillsbury Bakeries and Foodservice	Swedesboro	HAZUS	Hazmat	101 Arlington Boulevard
Repaupo Volunteer Fire Company	Swedesboro	HAZUS	Fire	Route 8
Swedesboro Police Department	Swedesboro	HAZUS	Police	1500 Kings Highway
Woolwich Police Department	Swedesboro	HAZUS	Police	120 Woods
Woolwich Police Department	Swedesboro	HAZUS	Police	Woodstown
Woolwich Township Fire Prevention	Swedesboro	HAZUS	Fire	121 Woodstown Road
Chestnut Street Water Plant	Swedesboro	HAZUS	Water/Sewage Facility	120 Chestnut Street
Park Avenue Water Plant	Swedesboro	HAZUS	Water/Sewage Facility	566 Park Avenue
Waste Water Plant	Swedesboro	HAZUS	Water/Sewage Facility	1101Kings Highway
Swedesboro/Woolwich Fire Department	Swedesboro	HMP	Fire	1517 Kings Highway
Bells Lake Dam	Washington	HAZUS	Dam	
Bethel Lake Dam	Washington	HAZUS	Dam	
Bunker Hill Middles School	Washington	M/2020		372 Pitman Downer Road
Cardinal Village Retirement	Washington	M/2020		455 Hurfsville-Crosskeys Road
Chestnut Ridge Middle School	Washington	M/2020		641 Hurfsville-Crosskeys Road
Kandle Lake Dam	Washington	HAZUS	Dam	
Kennedy Memorial Hospital	Washington	M/2020		435 Hurfsville-Crosskeys Road
New Seasons Assisted Living	Washington	M/2020		600 Medical Center Drive
NJ Transit	Washington	M/2020		6000 State Highway 42
Orchard Valley Middle School	Washington	M/2020		238 Pitman Downer Road
Sterling Lake Dam	Washington	HAZUS	Dam	
Washington Police Department	Washington	HAZUS/M2020	Police	1 Mcclure
Washington Township Fire District Headquarters	Washington	M/2020		231 E Holly Avenue
Washington Township High School	Washington	M/2020		529 Hurfsville-Crosskeys Road
Washington Township Mua	Washington	M/2020		152 Whitman Drive
Washington Township Municipal Building	Washington	M/2020		523 Egg Harbor Road
Washington Township Public Library	Washington	M/2020		208 E. Holley
Washington Township Fire District	Washington	HAZUS	Fire	213 E. Holly Avenue
Gardens at Crosskeys	Washington	HMP	Assisted Living	Glassboro-Crosskeys Road
Terraces at Parke Place	Washington	HMP	Assisted Living	Delsea Drive

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
#1 Water Well Pumping Station	Wenonah	M/2020		1 N. Clinton Avenue
Holy Trinity Episcopal Church	Wenonah	M/2020		(No#) N. Monroe Avenue
Memorial Presbyterian Church	Wenonah	M/2020		202 E. Mantua Avenue
Wenonah Fire Department	Wenonah	HAZUS/M2020	Fire	14 S. West Avenue
Wenonah Lake Dam	Wenonah	HAZUS	Dam	
Wenonah Library	Wenonah	M/2020		101 E. Mantua Avenue
Wenonah Medical Association	Wenonah	M/2020		107 E. Mantua Avenue
Wenonah Municipal Building and Police Department	Wenonah	HAZUS	Police	1 W. Cherry
Wenonah Public School	Wenonah	M/2020		200 N. Clinton Avenue
Wenonah Public Works	Wenonah	M/2020		(No#) W. Maple Avenue
Wenonah Sewer Pumping Station #1	Wenonah	M/2020		(No#) E. Elm Street
Wenonah Sewer Pumping Station #2	Wenonah	M/2020		(No#) N. Jefferson Avenue
Wenonah Sewer Pumping Station #3	Wenonah	M/2020		(No#) Lenape Trail
Wenonah Sewer Pumping Station #4	Wenonah	M/2020		(No#) E. Mantua Avenue
Wenonah Sewer Pumping Station #5	Wenonah	M/2020		(No#) S. Marion Avenue
NuStar Asphalt LLC	West Deptford	M/2020		(No#) Paradise Road
Colonial Manor Fire House	West Deptford	M/2020		Academy Avenue
Colonial Pipeline	West Deptford	M/2020		696 Mantua Grove Road
GCUA	West Deptford	M/2020		(No#) Paradise Road
Greenfield Fire House	West Deptford	M/2020		31 Budd Boulevard
Harbor Pipeline	West Deptford	M/2020		Kings Highway and Jessup Road
COIM	West Deptford	HAZUS	Hazmat	286 Mantua Grove Road
Johnson Matthey Inc.	West Deptford	HAZUS	Hazmat	2001 Nolte Drive
Manor Care	West Deptford	M/2020		550 Jessup Road
Municipal Complex	West Deptford	M/2020		400 Crown Point Road
Solvay Solexis	West Deptford	M/2020	Hazmat	(No#) Leonards Lane
Sunoco	West Deptford	M/2020		Route 130 and I-295
Thorfare Fire House	West Deptford	M/2020		Firehouse Road
Verga Fire House	West Deptford	M/2020		Hessian Avenue
Thorofare Volunteer Fire Company	West Deptford	HAZUS	Fire	Firehouse Road
West Police Department	West Deptford	HAZUS	Police	400 Crown
Gulf Loading Terminal	West Deptford	HMP		Kings Highway
Thorofare Volunteer Fire Company	West Deptford	HAZUS	Fire	Firehouse Road
West Police Department	West Deptford	HAZUS	Police	400 Crown

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Gulf Oil L.P. Woodbury Terminal	West Deptford	HAZUS/M2020	Hazmat	920 Kings Highway
Eagle Point Cogeneration Ptnr. (EPCP)	West Deptford	HAZUS	Hazmat	US Route 130 S. and I-295
Coastal Eagle Point Oil Company	West Deptford	HAZUS	Hazmat	Route 130 and I-295 S.
Verga Fire Department	West Deptford	HAZUS	Fire	1415 Crown Point Road
Westville Fire District 1	Westville	HAZUS	Fire	23 W. Olive Street
Westville Fire District 1	Westville	HAZUS	Fire	836 Broadway
Westville Police Department	Westville	HAZUS	Police	114 Crown Point Road
Westville Water Treatment Plant	Westville	HMP	Water Facility	114 Crown Point Road
Westville Borough Offices	Westville	HMP	Data Storage	1035 Broadway
Parkview School	Westville	HMP	Shelter	101 Birch Avenue
Sewage Treatment Pumping Station	Westville	HMP	Water/Sewage Facility	
Tacoma Fire Company	Westville	HAZUS/M2020	Fire	768 Tacoma Boulevard
Woodbury Police	Woodbury Heights	HAZUS	Police	500 Elm Avenue
Colonial Park Apartments	Woodbury	M/2020		401 S. Evergreen Avenue
Evergreen Avenue School	Woodbury	M/2020	Shelter	160 N. Evergreen Avenue
Gloucester County Justice Complex	Woodbury	HAZUS	Police	70 Hunter
St. Patrick's Church School	Woodbury	M/2020		64 Cooper Street
Underwood-Memorial Hospital	Woodbury	HAZUS/M2020	EMS	509 North Broad Street
Walnut Street School	Woodbury	M/2020	Shelter	60 Walnut Street
West End Memorial School	Woodbury	M/2020	Shelter	205 Queen Street
Woodbury City Hall Complex	Woodbury	M/2020	EOC	33 Delaware Street
Woodbury Creek Dam	Woodbury	HAZUS	Dam	
Woodbury Friendship Fire Company	Woodbury	HAZUS	Fire	29 Delaware Street
Woodbury Goodwill Fire Company	Woodbury	HAZUS	Fire	642 N. Broad Street
Woodbury High School	Woodbury	M/2020	Shelter	25 N. Broad Street
Woodbury Mews	Woodbury	M/2020		122 Green Avenue
Woodbury Police Department	Woodbury	HAZUS/M2020	Police	200 N. Broad Street
Charles Stratton Elementary School	Woolwich	M/2020	Shelter	15 Frederick Boulevard
Kingsway Regional High School	Woolwich	M/2020	Shelter	201 Kings Highway
Lake Basgalore Dam	Woolwich	HAZUS	Dam	Route 538
Porches Mill Dam	Woolwich	HAZUS	Dam	Oliphant Mill Road
Woolwich Township Police Department	Woolwich	M/2020	Police	120 Woodtown Road
Grasso Foods	Woolwich	NJ OHS	Food Processing	Ogden Road

NAME	MUNICIPALITY	SOURCE	USE	ADDRESS
Kingsway Middle School	Woolwich	HMP	Shelter	201 Kings Highway
Kings Highway Dam	Woolwich/Swedesboro	HMP	Dam	Between Glen Echo and Paulsboro Road

Appendix F
Capability Assessment

Contents of this Appendix

F.1 Federal Capabilities

This section describes federal laws and regulations that provide the guidance and requirements necessary for the Gloucester County and its constituent municipalities to follow in order to be in compliance with federal law and to receive federal support in the planning stages of mitigation as well as during and after a disaster occurs in the county.

Table F.1-1 Federal Laws which Impact Hazard Mitigation
(Source: New Jersey State Hazard Mitigation Plan Update, 2008)

LAWS AND REGULATIONS	DESCRIPTION
Bunning-Bereuter-Blumenaurer Flood Insurance Reform Act of 2004	The Flood Insurance Reform Act of 2004 amended the 1994 National Flood Insurance Reform Act of 1968 to reduce losses to properties for which repetitive flood insurance claim payments have been made. The Act established the pilot program for mitigation of severe repetitive loss properties. It gave the Federal Emergency Management Agency (FEMA) the authority to fund mitigation activities for individual repetitive loss claims properties. The Act provides additional coverage for compliance with land use and control measures.
Disaster Mitigation Act of 2000	The Disaster Mitigation Act of 2000 (DMA 2000) (P.L. 106-390) provides an opportunity for states, tribes and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Act) by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of mitigation plan requirements (Section 322). This new section emphasizes the need for state, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts. The requirement for a state mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans: “Standard” and “Enhanced.” States that demonstrate an increased commitment to comprehensive mitigation planning and implementation through the development of an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program (HMGP). DMA 2000 also established a new requirement for local mitigation plans and authorized up to 7% of HMGP funds available to a state to be used for development of state, Tribal, and local mitigation plans.

National Flood Insurance Reform Act (NFIRA) of 1994 (42 USC 4101)	This act resulted in major changes to the National Flood Insurance Program (NFIP). The law amended the Flood Disaster Protection Act of 1973. It provides tools to make the NFIP more effective in achieving its goals of reducing the risk of flood damage to properties and reducing Federal expenditures for uninsured properties that are damaged by floods.
Robert T. Stafford Disaster Relief and Emergency Assistance Act	The Act provides an orderly and continuing means of assistance by the federal government to state and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from such disasters by: 1. revising and broadening the scope of existing disaster relief programs; 2. encouraging the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the states and by local governments; 3. achieving greater coordination and responsiveness of disaster preparedness and relief programs; 4. encouraging individuals, states, and local governments to protect themselves by obtaining insurance coverage to supplement or replace governmental assistance; 5. encouraging hazard mitigation measures to reduce losses from disasters, including development of land use and construction regulations; and 6. providing federal assistance programs for both public and private losses sustained in disasters.
Federal Civil Defense Act of 1950	Establishes the federal framework for providing fiscal assistance to the state's emergency management activities.
PL-99-400 Superfund Reauthorization Act	Requires chemical handling facilities to prepare annual chemical inventories and maintain emergency response plans. It also requires an emergency planning structure be instituted for the state and local emergency planning committees.
Federal Property Administration Services Act	Establishes the procedures for the transfer of excess and surplus federal property to the states

F.2 State Capabilities

This section and the tables contained therein describe state laws and regulations that provide the guidance and requirements necessary for the Gloucester County and its constituent municipalities to follow in order to be in compliance with federal law and to receive federal support in the planning stages of mitigation as well as during and after a disaster occurs in the County. It also describes and evaluates state capabilities for hazard mitigation.

For additional information regarding important updates and changes to state rules and regulations, including the Flood Hazard Control Act, water quality planning rules, efforts related to storms and flooding, forest fire, and dam failures, please refer to New Jersey State Hazard Mitigation Plan Update (SHMPU) (2008), Section 5.7. For further evaluation of federal and state capabilities, see New Jersey SHMPU, Section 5.7. For further information on State Pre- and Post-Disaster Hazard Management Organization, Policies, Programs and Capabilities, see New Jersey SHMPU, Section 5.6.

Table F.2-1: State Laws and Regulations that Impact Hazard Mitigation
(Source: New Jersey SHMU, 2008)

LAWS AND REGULATIONS	DESCRIPTION
Freshwater Wetland Protection Act (NJSA 13 B:1)	New Jersey enacted this law to support development and enhancement of state, local, and tribal wetland protection programs. Projects must clearly demonstrate a direct link to increasing a state's ability to protect wetland resources. Grants are federally funded and administered by the New Jersey Department of Environmental Protection (NJDEP).
Flood Hazard Area Control Act (NJSA 58:16A-52)	New Jersey enacted this law in the interest of the safety, health, and general welfare of the people of the state that legislative action be taken to empower the NJDEP to delineate and mark flood hazard areas, to authorize the NJDEP to adopt land use regulations for the flood hazard area, to control stream encroachments, to coordinate effectively the development, dissemination, and use of information on floods and flood damages that may be available, to authorize the delegation of certain administrative and enforcement functions to county governing bodies and to integrate the flood control activities of the municipal, county, state, and federal governments.
Waterfront Development Statutes (NSA 12:5-1)	New Jersey enacted this law to ensure that all plans for the development of any waterfront upon any navigable water or stream of this state or bounding thereon, which is contemplated by any person or municipality, in the nature of individual improvement or development or as a part of a general plan which involves the construction or alteration of a dock, wharf, pier, bulkhead, bridge, pipeline, cable, or any other similar or dissimilar waterfront development shall be first submitted to the NJDEP. No such development or improvement shall be commenced or executed without the approval of the NJDEP first had and received, or as hereinafter in this § provided.
Freshwater Wetland Protection Act (NJAC 7:71)	Regulations to support the New Jersey freshwater wetlands program which protects freshwater wetlands, and upland areas within 150' of wetlands (sometimes called "buffers"), from development which will impair the wetlands.
Flood Hazard Area Control Act (NJAC 7:13)	The specific intent of the regulations is minimize potential on and off site damage to public or private property caused by development which, at times of flood, subject structures to flooding and increase flood heights and/or velocities both upstream and downstream. These rules are also intended to safeguard the public from the dangers and damages caused by materials being swept onto nearby or downstream lands, to protect and enhance the public's health and welfare by minimizing the degradation of water quality from point and non point pollution sources and to protect wildlife and fisheries by preserving and enhancing water quality and the environment associated with the floodplain and the watercourses that create them. Without proper controls, development in the floodplain and the watercourses that create them may adversely affect the flood carrying capacity of these areas, subject new facilities to flooding, reduce natural flood storage that the floodplain provides, increase the volume of storm water runoff, degrade the water quality of the receiving water body, and result in increased sedimentation, erosion or other environmental damage. Any development in areas regulated by this § must conform to criteria which, as outlined in this §, depend upon the characteristics of the area and the type of activity involved.
NJSA 2A:53A-13.1	No volunteer fire company, volunteer first aid, rescue or emergency squad, civil defense unit, which provides services for the control and extinguishment of fires or emergency public first aid and rescue services shall be liable in any civil action to respond in damages as a result of any commission arising out of the rendition in good faith of any such services.
NJSA 2A:62A-7	No individual, partnership, corporation, association, or other entity shall be liable for civil damages as a result of acts taken in the course of rendering care, assistance, or advise with respect to an incident creating a danger to persons or property.
NJSA 2C:17-2	A person who purposely or knowingly, unlawfully causes an explosion, flood, collapse of a building, release or abandonment of poison gas, radioactive materials or any other harmful substance will be charged with a crime in the second degree.

LAWS AND REGULATIONS	DESCRIPTION
NJSA 13:1E-80 .	All major hazardous waste facilities shall, for the purpose of local property taxation, be assessed and taxed in the same manner as other property.
NJSA 13:IK-17	When the NJDEP obtains information which leads it to suspect. that hazardous discharge has occurred, they shall immediately notify the governing body and local Board of Health of the municipality in which the hazardous discharge has occurred and shall take appropriate act verify that discharge has occurred.
NJSA 26:2D-37-et seq.	The Division of State Police and the NJDEP shall prepare or cause to be prepared and adopt a State Radiation Emergency Response Plan. This statute covers local response plans, county response plans, the powers and duties of DEP and the powers and duties of the Division of State Police. The statute also provides guidelines for other relevant agencies needed for radiation response.
NJSA 38A: 2-3 et seq.	Whenever the militia, or any part thereof, is employed in aid of civil authority, the Governor, if in his/her judgment the maintenance of law and order will thereby be promoted, may by proclamation, declare any county or municipality, or part thereof, which the troops are serving to be subject to martial law.
NJSA 38A: 3-6.1	The Governor shall have the authority to order to active duty, with or without pay, in State service, such members of the New Jersey National Guard that in their judgment are necessary to provide aid in circumstances which threaten or are a danger to the public health, safety, or welfare.
NJSA 38A: 20-3	The purpose of this law is to provide mutual aid among the states in meeting any emergency or disaster from enemy attack or other cause (natural or otherwise) including sabotage and subversive acts and direct attacks by bombs, shellfire, and atomic, radiological, chemical, bacteriological means, and other weapons. The prompt, full and effective utilization of the resources of respective states, including such resources as may be available from the United States Government or any other source, are essential to the safety, care and welfare of the people.
NJSA 39:4-213	The Attorney General is authorized to erect directional signals or signs, and assign such police personnel as may be necessary for the manual direction of traffic during an emergency.
NJSA 40A: 14-156.4	The county emergency management coordinator may by express order suspend operation of the provisions upon declaration of a State of Emergency.
NJSA 52:27D-222	This law directs certain entities which store, manufacture, distribute or warehouse unusually hazardous substances to develop an emergency response plan along with the county or municipal fire officials.
NJSA 55:13C-1	Need for emergency shelters for victims of fire, natural disasters, domestic violence and other causes of homelessness. Directs the Department of Community Affairs and Human Services to develop regulations for implementation of the Rooming and Boarding Housing Act of 1979.
NJSA 58:16A-66 et seq.	The Commissioner of the NJDEP shall in consultation with the United States Army Corps of Engineers and in coordination with the Office of Emergency Management in the Division of State Police, develop a flood early warning system.
NJSA 58:16a-101	The Office of Emergency Management (OEM) shall notify the emergency management organization in the counties, which shall then notify the local police departments in the event of a flood situation.
NJAC § 17	The Governor is authorized to enter into agreements with the governors of any of the states bordering on New Jersey for the protection in the event of emergency of any or all interstate bridges, tunnels, ferries, and other communications facilities.

Table F.2-2: Summary of New Jersey State Mitigation Policies, Programs, and Capabilities
(Source: New Jersey SHMPU, 2008)

Agency	New Jersey Office of Emergency Management (NJOEM) is responsible for the oversight and management of state and local hazard mitigation plan preparation process; identification and evaluation of mitigation planning programs and opportunities; coordination of mitigation planning with preparedness, response and recovery planning and event management; and coordination of natural hazard.
Program	Planning Grant Program: Helps counties compete for federal funding to pursue Hazard Mitigation Plans
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	Nineteen counties in New Jersey have been awarded federal grants, matched with local funds to prepare All Hazard Mitigation Plans. Because plans are a requirement for accessing FEMA grants, then this program supports pre- and post-hazard mitigation.
Program	The Preparedness/Mitigation Unit, Emergency Management Section, New Jersey State Police: Provides technical resources, contacts to other expert agencies, and guidance for county mitigation plans and projects
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	The Preparedness/Mitigation Unit, with a full time staff of four employees have been working to offer workshops and provide technical expertise, either by them or with an expert agency. It would be most effective to have more expertise on staff, or to procure expert support, however it not feasible due to budget cuts at the state level. This group manages both pre- and post-hazard mitigation projects.
Program	Mitigation Grant Administration Program (Managed by the Preparedness/Mitigation Unit): The unit administers and assists in the implementation of all Federal mitigation grants awarded to counties and municipalities.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	Thirteen projects have been federally funded since the original plan was approved. This group manages both pre- and post-hazard mitigation projects.
Program	Public Assistance (PA) This program, available after a Presidential disaster declaration, allows mitigation measures to be designed into projects to repair or restore public facilities damaged by the disaster event.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	PA grants have been awarded to multiple jurisdictions throughout the state following every disaster declaration. This program supports post-disaster mitigation.
Program	Pre-Disaster Mitigation Program (PDM) This annual, nationally competitive program funds hazard mitigation plans and cost-effective projects that reduce or eliminate the effects of hazards and/or vulnerability to future disaster damage.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	Two Projects awarded and 10 Planning Grants awarded in 2005-2007. This program supports pre disaster mitigation.

Program	Flood Mitigation Assistance Program (FMA) This program funds flood mitigation plans, provides technical assistance, and funds construction projects that reduce flood risk to insured, repetitive loss properties.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	Four projects awarded in 2006-2007 and three planning grants awarded in 2005-2007. This program supports pre-disaster mitigation.
Program	Hazard Mitigation Grant Program (HMGP) This program, available after a Presidential Disaster Declaration, funds hazard mitigation plans and cost-effective projects that reduce or eliminate the effects of hazards and/or vulnerability to future disaster damage. Typically, the state provides a portion of the required non-federal match.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	Five projects awarded in 2005-2007 and three planning grants awarded in 2005-2007. This program supports post disaster mitigation.
Program	Severe Repetitive Loss Programs (SRL) Program provides funds to assist states, Indian Tribal governments, and local governments participating in the NFIP in reducing or eliminating the long-term flood risks to severe repetitive loss properties, thus reducing outlays from the NFIF.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	New program–effectiveness is to be determined. Would support pre-disaster mitigation.
Program	Repetitive Flood Claims (RFC) The Repetitive Flood Claims (RFC) grant program provides mitigation funding for structures insured under the National Flood Insurance Program (NFIP) located in a State or community that cannot meet the requirements of the Flood Mitigation Assistance (FMA) program. The long-term goal of the RFC program is to reduce or eliminate claims under the NFIP through mitigation activities that are in the best interest of the National Flood Insurance Fund (NFIF).
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	Three projects awarded in 2007. This program supports pre-disaster mitigation.
Program	New Jersey Emergency Operations Plan (EOP): Through the Emergency Support Function (ESF) 14- Long term Recovery Plan, NJOEM will work with Office of Homeland Security to have a plan for long term planning and recovery prior to a disaster or emergency. One of the areas of planning includes mitigation. This coordination will allow for another statewide plan to incorporate mitigation principles and planning for New Jersey.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	At the time of plan update, this ESF has not formally met and, therefore, it is difficult to provide an assessment of effectiveness. The program would support pre hazard mitigation.

Agency	New Jersey Department of Environmental Protection (NJDEP) supports mitigation efforts through analysis of assessment of natural hazards, identification and management of grant programs; leads state coordination for the National Flood Insurance Program, the Office of Land Use Regulation, New Jersey Forest Fire Service, Geologic Survey and coordination with state and federal programs affecting natural hazard mitigation including open space conservation, historic preservation, water resources management, dam safety, and shore protection.
Program	The Bureau of Land Use Compliance and Enforcement responds to reports and/or complaints of possible land use violations received from municipal and county officials, private citizens, and other public and private organizations. It conducts education and outreach programs to educate all levels of government, organizations, and citizens on the technical aspects of the rules regulating development in areas under the Municipal Land Use Law (MLUL) jurisdiction and the importance of complying with them. In addition, the bureau conducts inspections of Land Use Permits to ensure compliance with the permit conditions, requirements, and limitations and issues enforcement documents compelling compliance
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	The Bureau monitors enforcement cases to ensure compliance by the respondent either securing appropriate Land Use permits or by removing the violation by restoration and/or mitigation. The Bureau monitors enforcement cases to ensure compliance by the respondent either securing appropriate Land Use permits or by removing the violation by restoration and/or mitigation Compliance and Enforcement-Activity Output Summaries These reports show the total number of various activities over time and by program. A graph is followed by the data in tabular format for each year. http://datamine2.state.nj.us/dep/DEP_OPRA/EnfSummaries.htm Site Inspections - 2002 2003 2004 2005 2006 Investigations 2004 2005 2006 Submittal Reviews - 2002 2003 2004 2005 2006 Enforcement Actions - 2002 2003 2004 2005 2006 Compliance Rates Outcomes - The data in these reports are based the number of discrete facilities or entities inspected by the programs and reflect the percentage of those facilities or entities found in compliance during site inspections only. These figures exclude observations based solely on submittals of self-reported information, monitoring and investigations (such as those stemming from hot-line calls or complaints). Facilities or entities are only counted once even if inspected multiple times within a given period. One or more violations at any inspection in the period counts as non-compliance. The entities counted here are only where routine or pre-planned inspections occurred and are primarily where permits, licenses, or other departmental approvals exist. Charts and tables with monthly breakdowns 2002 2003 2004 2005 2006 2007.
Program	The Division of Land Use Regulation's (DLUR) main task is reviewing applications for permits to build on, or modify, environmentally sensitive land such as freshwater wetlands, freshwater wetlands transition areas, coastal wetlands, floodplains, or to conduct regulated activities in the Highlands Preservation Area or Coastal Zone. Also, the DLUR issues grants, leases and licenses for use or occupation of state owned tidelands. Furthermore, the DLUR reviews certain applications for compliance with portions of the department's stormwater management rules.
Effect on Loss Reduction	Help
Funding Available	No

Effectiveness	Since July of 1992, pursuant to NJSA 13:1D-115 the NJDEP submits to the Senate Environmental Quality Committee and the Assembly Energy and Environment Committee a semi-annual report. That report includes the type of permits issued by the department during the reporting period, summaries of the records required to be maintained pursuant to this act, and any other statistical or other type of information deemed pertinent by the department to evaluate the various division, bureaus, agencies, office and other administrative units. Since 2007 DLUR permit reports are available on the internet. 2007 Land Use Dashboard Reports and January and February 2008 Land Use Dashboard Reports that tracks numbers of permits received and issued are available at http://datamine2.state.nj.us/dep/DEP_OPRA/dashboard.html#2008land The November 5, 2007 adoption of the new Flood Hazard Area Protection Act rules created new permits-by-rule for specific activities such as elevating an existing home or reconstructing a home outside the floodway. These permits-by-rule require notice to the Department for compliance and enforcement purposes. Since these activities are no longer grouped in the former Major or Minor permit types we expect to be able to report on the number of notices received for these specific mitigation activities in the future. The Division maintains two reports that are used to report to the United States Environmental Protection Agency (EPA) wetland impacts associated with the issuance of Freshwater Wetlands (FWW) general permits. One tracks the specific FWW permit types and amount of wetlands disturbance for the years starting in 2000. The second more general report tracks the number of approved permits and the acres of wetlands affected every year from 1988 to present, which covers the entire program's life. This Division supports pre hazard mitigation.
Program	New Jersey's Shore Protection Program was created to provide for the protection of life and property along the coast, preserve the vital coastal resources, and maintain safe and navigable waterways throughout the state. Operating under the Office of Engineering and Construction, the Bureau of Coastal Engineering is responsible for administering beach nourishment, shore protection, and coastal dredging projects throughout the state. Additionally, the Bureau maintains the state's aids to navigation, provides 24-hour operation of the Raritan Bayshore Floodgate and is responsible for conducting storm surveys, damage assessments and emergency repairs for coastal storms.
Effect on Loss Reduction	Help
Funding Available	Yes, Shore protection projects are funded through the Shore Protection Fund (NJSA 13:19-16 et seq.), either through a federal-state-local cost share or a state-local cost share, depending on the size and scope of the project. Twenty-five million in annual stable funds have been appropriated through the Shore Protection Fund of 1992. Additional funds have been provided by Shore Protection Bonds issued in 1977 and 1983 and by state appropriation in 1988.
Effectiveness	Eligible projects must be associated with the protection, stabilization, restoration, or maintenance of the shore, including monitoring studies and land acquisition and must be consistent with the current Shore Protection Master Plan and Coastal Zone Management Program. Such projects must be tidally influenced during normal tide cycles and be located on public land or property which has legal, perpetual easements for public access and use. This program supports both pre and post hazard mitigation.

Program	Water Quality-Municipal Finance and Construction Division administers the Environmental Infrastructure Financing: The New Jersey Environmental Infrastructure Financing Program (Financing Program) is a revolving loan program administered by the Municipal Finance and Construction Element, and the New Jersey Environmental Infrastructure Trust (Trust), an independent state financing authority. The Financing Program provides loans to local government units for the construction of wastewater treatment facilities, sludge management systems for wastewater and water treatment systems, combined sewer overflow abatement, stormwater, and other non-point source management projects. The Financing Program also provides loans to both publicly and privately owned drinking water systems for the construction or upgrade of drinking water facilities, transmission and distribution systems, storage facilities, and source development. Funds are made available under the federal Clean Water and Safe Drinking Water Acts and various state bond acts.
Effect on Loss Reduction	Help
Funding Available	Yes through loans
Effectiveness	Since the enactment of the loan program, more than $1.5 billion in state and federal funds have been awarded. This program supports both pre and post hazard mitigation.
Program	The Geographic Information System (GIS) Bureau provides technical review of land survey plans needed for Green Acres applications. The Bureau also provides preliminary assessment if land can be used without risk to public health.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	This Bureau supports pre-hazard mitigation.
Program	Municipal Stormwater Regulation Water Quality Division: Watershed Permitting program implements stormwater rules for permitting stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). There are 462 Tier A municipalities and 100 Tier B municipalities. The general permits address stormwater quality issues related to new development, redevelopment and existing development by requiring municipalities to implement a number of Statewide Basic Requirements.
Effect on Loss Reduction	Facilitate
Funding Available	The amount of monetary assistance provided varies upon need. Grantee must provide 25% of the construction cost, provide engineering design and specifications, and provide perpetual easements and parking to ensure public access. Applications will be considered year-round; however, to be considered for an upcoming fiscal year that begins July 1, applications must be received by May 1.

Effectiveness	New Jersey's commitment to restoring its watersheds and water quality include the issuance of New Jersey Pollutant Discharge Elimination Systems permits including effluent limits for point sources and requiring stormwater best management practice implementation for nonpoint source pollution control, the development of Total Maximum Daily Loads and restoration plans for impaired water bodies, and the implementation of these plans including on-the-ground projects funded through the federal 319(h) and 604(b) Grant Programs and State Corporate Business Tax Watershed Funds. This year they have resulted in enormous pollutant loading reductions in the Grants Reporting and Tracking System (GRTS). New Jersey published the *State of Nonpoint Source Report 2007* Update (April, 2007) that provides an assessment of how the state is improving water quality and many examples of projects implemented (http://www.nj.gov/dep/watershedmgt/DOCS/NPSReport2007.pdf).
Program	The New Jersey Forest Fire Service is the agency responsible for protecting life, property and the state's natural resources from wildfire. They offer various activities directed at reducing the number of incidences of wildfire, including; public education and awareness, law enforcement, and engineering practices such as the reduction of fuel hazards (fuels management) or community planning. These efforts include community outreach with Smokey bear, posters, signs, and public service advertisements, recreational and agricultural open burning permitting and enforcement, hazardous fuel reduction planning and implementation using prescribed burning and mechanical thinning, road and firebreak maintenance programs, wildfire training to cooperating agencies, wildfire prevention education programs to the public, and a Community Wildfire Hazard Mitigation Assistance Grant Program for local communities. Additionally, the New Jersey Forest Fire Service maintains agreements with other federal, state, county, and municipal agencies regarding all facets of wildfire management. The program will assist in improving wildfire protection and preparedness capabilities, increasing community wildfire awareness and education, and provide assistance to local fire agencies. In addition the program will assist in reestablishing ecosystems after wildfires, reducing excessive fuel accumulations in and around communities and provide economic development opportunities. Members of the New Jersey Forest Fire Service also serve on the State Hazard Mitigation Team (SHMT). Due to budget restraints, the New Jersey Forest Fire Service is not fully staffed (there are 69 positions, fully staffed would be 89 positions), yet the New Jersey Forest Fire Service is responsible to handling all of the state's wildfires.
Effect on Loss Reduction	Help
Funding Available	The New Jersey Forest Fire Service administers the Community Wildfire Hazard Mitigation Assistance Grant Program, a United States Department of Agriculture (USDA) Forest Service funded grant program that provides reimbursement of up to $5,000 on New Jersey Forest Fire Service's approved projects that help meet the state fire prevention objectives through a 50/50 cost.
Effectiveness	In 2006 and 2007, 33 Community Wildfire Hazard Grants were given with the grant expenditure totaling $106,008.31. By requiring the 50% match, nearly a quarter million dollars of hazard reduction was accomplished while obtaining grass-roots support and education to the problem of wildfire fuel hazards. With regard to staffing, the New Jersey Forest Fire Service is not fully staffed and must focus on core activities.
Program	The New Jersey Forest Fire Service provides various educational awareness programs to inform and educated the public on ways to prevent or mitigate wild fires. The New Jersey Forest Fire Service also provides information to counties and municipalities as they draft their fire plans and all hazard plans.
Effect on Loss Reduction	Facilitates
Funding Available	No

Effectiveness	While general education is helpful for individuals to understand and prepare for wildfires, the New Jersey Forest Fire Service would like to see more communities have wildfire preparedness plans and encourage communities participate in the Firewise Organization. However, there is little funding support to help communities draft plans. As of 2007, there are nine townships and one community association who are recognized as Firewise communities. The New Jersey Forest Fire Service cannot meet many of the informational requests from the Counties and Municipalities as they draft these plans because there is limited staff to help develop databases to maintain historical data, mapping and State Hazard Plan files. This program supports pr- hazard mitigation.
Program	The New Jersey Forest Fire Service provides various engineering practices to mitigate wildfires including prescribed burning and mechanical thinning.
Effect on Loss Reduction	Help
Funding Available	No. Only with USDA Forest Service grants are these projects funded.
Effectiveness	Planned burning, especially for the Pine Barren region, is a highly effective mitigation tool that also supports this unique fire-based ecosystem. However, there is a very limited window for burning (between February and mid-March) and dependent upon wind and smoke issues, usually there are only a couple of weeks whereby burning could be used. The alternative, mechanical thinning is not a form of mitigation that is automatically approved by the Pinelands Commission. Therefore, the New Jersey Fire Service must receive permits from the Commission before thinning and there is limited funding available and currently no sustainable forestry use companies available to utilize the resulting products and help reduce the costs.
Program	The New Jersey Forest Fire Service provides enforcement of state wildfire laws for fire prevention.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	While there is a law that allows hazardous fuels reduction, there are no regulations or updated fire codes that address vegetation clearance or defensible space around structures. Therefore the state has no ability to force fuel reductions on private property. Clear regulations, guidelines and codes would help address these issues.
Program	The New Jersey Forest Fire Service provides structural assessments to help prevent or mitigate damage to these structures.
Effect on Loss Reduction	Help
Funding Available	No. Each year the there have been budget cuts and the budget of $300,000 will not allow the department to provide this service to assess structures for fire survivability
Effectiveness	Structure Assessments. When able, these assessments are highly valuable to educate the owners on how they can improve their home's survivability, it also educated the public on the hazard, provides guidance as to where mitigation should be directed to reduce the threats, and provides information (and maps) on hidden home and allows a more organized response because both the wildland firefighters and the municipal departments have knowledge as to where protection priorities area. This work support pre-hazard mitigation.
Program	The Wetlands Mitigation Council is to serve as a repository for land donations and monetary contributions collected as a result of freshwater wetland/state open water impacts that cannot be mitigated for on-site, off-site, or at a wetland mitigation bank. The Council also reviews and approves freshwater wetland mitigation banks. The collected monetary contribution dollars are deposited into the Wetland Mitigation Fund. The Council is responsible for the management and disbursement of dollars from the Wetland Mitigation Fund to finance mitigation projects.
Effect on Loss Reduction	Help
Funding Available	No

Effectiveness	The Council has the power to purchase land to provide areas for enhancement or restoration of degraded freshwater wetlands, to engage in the enhancement or restoration of degraded freshwater wetlands on any public lands, including public lands other than those acquired by the Council, and to preserve freshwater wetlands and transition areas determined to be of critical importance in protecting freshwater wetlands. All mitigation sites must be monitored starting the first full growing season after the construction/planting of the mitigation project is completed. Depending on the type of wetlands being created, restored and/or enhanced, the mitigation project must be monitored for three to five full growing seasons. Monitoring information must be collected twice a year in the early spring and the fall. Below is the web link for the submission requirements for both tidal and freshwater mitigation projects pdf documents. http://www.nj.gov/dep/landuse/mmonitoring.html Wetland Mitigation Monitoring Project Checklist pdf Tidal Wetland Mitigation Monitoring Checklist pdf This Council supports pre-hazard mitigation.
Program	The New Jersey Geological Survey (NJGS) evaluates geologic, hydrogeologic and water quality data to manage and protect water resources, to identify natural hazards and contaminants, and to provide mineral resources including offshore sands for beach nourishment. Information provided by the survey includes GIS data and maps of geology, topography, groundwater, and aquifer recharge. In addition the data tracks wellhead protection areas, aquifer thicknesses, properties and depths, groundwater quality, drought, as geologic resources, and hazards such as earthquakes, abandoned mines, karst and landslides.
Effect on Loss Reduction	Help
Funding Available	No direct monetary assistance is provided. However, an equivalent of three work days is available to counties and/or municipalities upon written or electronic request to the State Geologist.
Effectiveness	The earthquakes module for Hazards US has been updated for seven counties under grants from NJOEM. Pilot project underway with NJDEP Parks and Forests to identify abandoned mines in state parks and forests. A Pre-Disaster Mitigation Planning Subapplication to prioritize abandoned mine hazards has been submitted. Annual offshore investigation to identify sand and gravel resources for beach and dune replenishment. The NJGS supports pre-hazard mitigation.
Program	The NJDEP, Flood Control Section leads the state's efforts as the state NFIP Coordinator and Community Rating System (CRS) support. In addition, the section's responsibilities include the funding of construction and operation of federal-state-local flood control mitigation projects throughout the state, including the 24-hour operation of the Pompton Lakes Dam Flood Gates. The section has also taken a lead role on the development and adoption of New Jersey Flood Hazard Area mapping, as well as an active partnership with FEMA on their FEMA Map Modernization Program efforts.
Effect on Loss Reduction	Help
Funding Available	Yes, large scale flood control projects are cost-shared with the US Army Corps of Engineers through an annual state appropriation under the HR-6 Flood Control project budget. Also, $25 million was appropriated from the "Dam, Lake, Stream, Flood Control, Water Resources Project Bond Act 2003" to finance the costs of state-local flood control projects.

Effectiveness	Five hundred forty-four of the 566 total municipalities in New Jersey participate in the NFIP program of which 45 also participate in the CRS program. Nine municipalities with a class nine rating (5% premium reduction); 23 with a class eight rating (10% premium reduction); 11 with a class eight rating (15% premium reduction) and two with a class six rating (20% premium reduction). The avg. savings per policy holder is about $87.00 per year or a total community savings of about $9,384,397 per year. The New Jersey Dam Safety program, new state stormwater management requirements, and the development of all hazard mitigation plans, are some of the efforts at the state level that are available to provide CRS credits for all New Jersey municipalities. Municipalities are encouraged to adopt freeboard elevation requirements, which also provide CRS credits. Many municipalities in New Jersey are small and lack the professional support to fill out a CRS application, or do not have the flood insurance policy base to make it worth their while. However, we do reach out to communities during Community Assistance Visits, Community Assistance Contacts, technical assistance contacts and workshops to promote the CRS program.
Program	The Bureau of Planning and Information Management administers open space and recreational use guidance and offers local communities technical assistance for open space development and acquisition. The Bureau also administers the Land and Water Conservation fund, a federal fund to preserve open space.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This Bureau supports pre-hazard mitigation.
Program	The Green Acres Program works with landowners, municipal governments, county governments, nonprofit organizations, and other conservation partnerships to protect land of statewide significance. This is done through direct purchase or conservation easements. The program also awards matching grants and loans to municipal and county governments, and matching grants to nonprofit conservation organizations, to acquire open space and develop outdoor recreation facilities.
Effect on Loss Reduction	Help
Funding Available	The Green Acres Program assists municipalities, counties, and nonprofit conservation organizations in the acquisition of open space for recreation and conservation purposes, and the development of outdoor recreational facilities. Each year, Green Acres provides matching grant and low-interest loan funding from the Garden State Preservation Trust.
Effectiveness	Potential Funding Sources for Acquisition and Other Projects. All 21 New Jersey counties and 234 Municipalities have passed a tax rate to support Green Acres program. This program supports pre- and post-hazard mitigation.
Program	Tidal Gauge Monitoring has moved from New Jersey Department of Transportation (NJDOT) responsibility to NJDEP and NJOEM responsibility. The program funds gauges to monitor the tides as critical areas to warn about potential flooding.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	There is no permanent source of funding for this program. The New Jersey Association for Floodplain Management, League of Municipalities and United States Geological Survey-New Jersey are working with the State Legislature to earmark a permanent funding source for this program. Temporary funding is being provided by the NJOEM. This program supports pre hazard mitigation.

Agency	New Jersey Department of Banking and Insurance regulates the banking, insurance and real estate industries to ensure a viable, competitive, and solvent marketplace that is fair to New Jersey consumers. Pre-event mitigation is a major public policy for the Insurance Division
Program	The Insurance Division: Works with the insurance industry to encourage companies to use mitigation as a factor when they determine who they will insure. The Management, Property and Casualty, Enforcement, Solvency Regulation and Public Relations Divisions all promote mitigation efforts (e.g. hardening of structures to lesson or avoid potential damages) when they work with industry in their respective section of insurance. The marketplace is a tool to encourage homeowners, business-owners and property owners to consider mitigation options for more attractive insurance options or qualifying to be insured.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	This program supports pre-hazard mitigation.
Program	The Insurance Division: Also works with industry to promote insurance in all areas of New Jersey. When an area is difficult to insure because the risk is too great, the Division works with insurance companies who need to balance the risk with mitigation policies when reviewing their plans or if there is a request for a change in policies.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	There are at least two insurance carriers that residents can choose from in every municipality of New Jersey. This Insurance Division supports pre-hazard mitigation.
Program	Regulation: The Insurance Commission recently issued an Order (A07-126) mandating companies which are authorized to sell homeowner insurance to have a prepared Business Continuity Plan.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This order sets forth guidelines to ensure consistent industry practice is maintained in the event of a disaster or emergency and has not been tested since released. This regulation supports pre-hazard mitigation.

Agency	New Jersey Department of Community Affairs (NJDCA) is responsible to provide administrative guidance, financial, support, and technical assistance to local governments, community development organizations, businesses, and individuals to improve the quality of life in New Jersey. NJDCA offers a wide range of programs and services that respond to issues of public concern including fire and building safety, housing production, community planning and development, and local government management, and finance.
Program	Office of Smart Growth (OSG) coordinates planning throughout New Jersey to protect the environment, mitigate development hazards, and guide future growth into compact, mixed use development and redevelopment. OSG implements the goals of the State Development and Redevelopment Plan to achieve comprehensive, long term planning; and integrates that planning with programmatic and regulatory land use decisions at all levels of government and the private sector.
Effect on Loss Reduction	Facilitate
Funding Available	No

Effectiveness	New Jersey Development and Redevelopment Plan is a plan that has cross acceptance from all of the New Jersey departments and agencies, as well as counties, municipalities and New Jersey Citizens. It is a comprehensive plan for the development and redevelopment of the most densely populated state in the nation. While each department and agency is represented and must review and accept the plan, there is no member of the SHMT on the Smart Growth planning team. The SHMT will work with its counterparts in NJDEP and NJDCA to help bring attention to mitigation planning in the Plan and to utilize the State Hazard Mitigation Plan as reference. This Plan supports pre hazard mitigation planning.
Program	The Division of Codes is within the Department and establishes and enforces building codes, in partnership with the state's municipalities, to protect the health and safety of residents. Responsibilities of the Division include: implementing construction codes; implementing residential site improvement standards; and performing damage assessments. The Division also coordinates the code enforcement community response to an all hazard disaster and works closely with New Jersey State Police, NJOEM, and New Jersey Human Services in developing emergency shelter guidelines.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	Through the enforcement of the model codes, buildings are built to withstand wind damage. This Division supports pre- and post-hazard mitigation.
Program	The Fire Safety Division is a central fire service agency in the State within this department. The Division is responsible for the development and enforcement of the State Uniform Fire Code as well as for implementing public education, firefighter training and fire hazard mitigation programs. Specifically, it provides regulations, policies, training and education, and fire code responsibility. The Division is responsible to adopt implement and monitor The Fire Deployment Act. This Act enables the Division to coordinate first response assets out of harms way or to a specified location in advance of a disaster. The fire assets are located at a pre-designated location to be in close proximity in the event of disaster/emergency. The Division utilizes the National Incident Management System and Incident Command System for coordinating fire suppression assets throughout the state.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	When the April 2007 nor'easter was moving up the coast towards New Jersey, the Division of Fire Safety assisted in allocating assets to minimize damage. This Division supports pre- and post-hazard mitigation.
Program	The Office of Regulatory Affairs, which reports to the Division of Codes and Standards, provides educational materials for the public in all areas that it supports (e.g. flood safety, fire safety, building code etc.). This Office is also responsible for the implementation of the new mutual aid regulations for construction code personnel (state coordinate responsibility for UCC code enforcement support for the counties and municipalities).
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	NJSA 52.27D-126.3 Emergency Building Inspection Program (1-17-07) was passed to ensure that there are ample building codes officials deployed from throughout the state to a disaster and to expedite damage assessment and ensures that compensation will occur. This is a key mitigation success because a larger pool of licensed code officials are available, more coordinated and trained to be utilization during a disaster. This regulation supports pre- and post-hazard mitigation.

Agency	New Jersey Department of Transportation (NJDOT) plans, manages and integrates all transportation facilities to ensure the safe, efficient and effective movement of people and goods; planning and project implementation to reduce vulnerabilities to natural hazards and to mitigate potential impacts of natural hazards on critical transportation infrastructure; and identify and reduce vulnerabilities of people and materials to natural hazards through emergency evacuation or other needs and initiatives.
Program	Administers the State's Transportation Trust Fund for Road construction, maintenance, improvement projects. Each municipality works with a regional coordinator to submit application requests up to a certain allocation per municipality and county.
Effect on Loss Reduction	Facilitate
Funding Available	Yes
Effectiveness	The Division of Local Aid and Economic Development District Offices administer our Programs and are strategically located close to their customers to build a better partnership with local government officials and engineers. The District Managers and their staff are available to assist with every phase of the process. Ongoing communication helps us to provide quality services and to ensure improved delivery of local transportation projects. This Fund supports pre- and post-hazard mitigation.
Program	NJDOT is a member of the SHMT and provides a hazard mitigation perspective to the NJDOT capital improvement program.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	Funding is allocated through the Statewide Transportation Improvement Program (STIP) and the Transportation Improvement Program (TIP) which make up the capital improvement program. This work supports pre and post hazard mitigation.
Program	County Route Diversion Plans: NJDOT Division of Traffic Operations partners with county governments to plan and implement county route diversion plans in an emergency. All of the 21 counties have established Diversion plans to date, except Camden, Cape May, Cumberland, Hunterdon, Gloucester, and Union. Of the aforementioned, NJDOT, in coordination with New Jersey State Police has plans in place to work with these counties.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	These Diversion Plans are a compilation of predetermined diversion routes developed to improve coordination between State and local agencies when incidents occur. These Diversion Plans offer the Incident Commanders viable alternate routes to utilize during incidents. NJDOT/New Jersey State Police can provide assistance to the Incident Commander in establishing these designated diversions for the movement of traffic around an incident, thus avoiding region-wide gridlock. These plans support pre mitigation.
Program	Reverse Lane Strategies (or contra flow operations) are developed as a measure of last resort for evacuation populations in harms way. NJDOT has four contra a flow plans in place: I95-Route 72, Atlantic City Expressway and Route 47/347. These plans are exercised each year in coordination with the State Policy and affected counties. These exercises help with the overall improvement of the contra flow plans as well as alerting staff to construction that plans would have to be updated to reflect. The Turnpike/Parkway Authority is working with NJDOT and the State Police on a Hurricane Evacuation Plan to use these roads in the event of a mass evacuation of the Coastal areas and the metropolitan New York area.
Effect on Loss Reduction	Facilitate
Funding Available	No

Effectiveness	Plans are continually exercised and recommendations documented in After Action Reports. These strategies support pre hazard mitigation.
Program	The NJDOT Division of Local Aid provides a competitive grant process for local governments to compete for funds for projects that include mitigation for flooding and other hazards.
Effect on Loss Reduction	Facilitate
Funding Available	Yes
Effectiveness	Municipal Aid Program-Administer the Municipal Aid Program for transportation improvements under municipal jurisdiction. Grants are funded by the Transportation Trust Fund through a competitive application based process administered by the Local Aid District Offices. $78.75M in TTF funding was available in the FY 2008 Municipal Aid Program. County Aid Program- Administer the County Aid Program for road and bridge infrastructure improvements under county jurisdiction. Each County receives an annual formula based allotment that takes into consideration county road lane mileage and population. The County Aid Program is funded through the Transportation Trust Fund and provides funding for eligible costs of projects included in the County's approved Annual Transportation Program. $78. 75M in TTF funding was available in the FY 2008 County Aid Program. This program support pre and post hazard mitigation.
Program	Works with the three Metropolitan Planning Agencies: Delaware Valley Regional Planning Commission (Greater Philadelphia, Camden, and Trenton areas); North Jersey Transportation Authority (federally authorized Planning organization for the 13 counties in the Northern region of the state); South Jersey Transportation Organization (Serve Atlantic, Cape May, Cumberland, and Salem counties) and what was done with each on mitigating hazards.
Effect on Loss Reduction	Facilitate
Funding Available	Yes
Effectiveness	Metropolitan Planning Organizations are (MPO'S) composed of locally elected officials and representatives of transportation and other state agencies and are federally mandated and designated by the Governor in each urban area. Each is a forum for continuing coordinated transportation planning and programs for its portion of the federal funds in a document called a Transportation Improvement Program (TIP). The MPO's formulate a long-range transportation plan, set short-term priorities, allocate funds and involve the public. NJDOT is a voting member of each of the State's three regional MPO's and helps coordinates their TIP's. These organizations support pre hazard mitigation.

Agency	New Jersey Department of Treasury insures the state's physical assets against the impact of accidental loss and to mitigate the adverse effect of accidental loss of the State's revenues. Also, Treasury can help identify potential resources available for program implementation through oversight of state agency budgets. Also, identifies leased or state owned facilities potentially vulnerable to natural hazards. New Jersey Department of Treasury is represented on the State Hazard Mitigation Team.
Program	The Division of Risk Management (DRM) is responsible for all State leased properties and a majority of state-owned properties and facilities. Many State Agencies run the day to day operation and maintenance for the buildings, properties and facilities they occupy so Treasury coordinates with NJDEP, NJDOT, Human Services, Corrections, and State Police to ensure proper management and maintenance of these buildings . In addition, Risk Management is responsible for insuring all of these properties and facilities. To help mitigate as quickly as possible when an emergency occurs or a disaster strikes one of the buildings, DRM has instituted the First Responder Network within the Agency to help in emergencies. When an agency contacts the State Police about a disaster/emergency, State Police has a point of contact in DRM to notify them of the disaster/emergency. DRM has an emergency responder team comprised of employees from Administration and Property management that are detailed to them in support of expediting insurance claims or support with other mitigation efforts.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	This Division supports pre- and post-hazard mitigation.
Program	While the New Jersey Board of Public Utilities (NJBPU) is an independent agency, it coordinates closely with Treasury. NJBPU works with private utility companies to provide analysis of natural hazard information affecting the provision of electric power, telecommunications, public water, sewage collection and treatment, and other regulated public utilities. The data is used during response and recovery efforts in the event of emergency or disaster and is also used to analyze impact of mitigation plans and projects.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	This agency supports pre- and post-hazard mitigation.
Program	Office of Management and Budget (OMB) maintains and updates the state critical facilities list. OMB works with NJOEM and SHMT to ensure that all parties have an updated list and have easy access to the list in the event of an emergency/disaster.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	This Division supports pre-hazard mitigation.
Program	State OMB and Administration Division audit all state grants to ensure that the grants are utilized appropriately per the requirements of the grant.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	These Divisions indirectly support pre and post hazard mitigation.

Agency	New Jersey Department of Agriculture oversees programs that protect and serve the state's diverse agriculture and agribusiness industries.
Program	New Jersey Department of Agriculture, Division of Agriculture, and Natural Resources: The Division deals with soil, water and land use issues, as well as Agriculture, Food and Natural Resources Education, Conservation Education, and Fish and Seafood Development. It also administers the Farm Bill Conservation Program for the USDA Natural Resources Conservation Service. State Agriculture Development Committee administers the Farmland Preservation Program which provides grants to communities to fund the purchase of development easements on farmland; directly purchasing farms and development easements from landowners; and offering grants to landowners in the program to fund of to 50% of the cost of soil and water conservation projects.
Effect on Loss Reduction	Facilitate–Help
Funding Available	Technical Assistance is available for engineering, biology, soils, hydrology and other areas. Grants are available through the Farm Bill Conservation Program.
Effectiveness	Farm and Ranch Lands Protection Program (FRPP) provides matching funds to help purchase development rights to keep productive farmland in agricultural uses. New Jersey received $3,973,785 in FY 2006, which was passed on to three cooperating entities through Cooperative Agreements. The funding will allow nearly 2,500 acres to be protected from development which preserves the natural land and support mitigation efforts.

Agency	Office of Information Technology (OIT) delivers valuable Internet development, GIS, and data management services. To prepare for the possibility of any type of disaster, OIT has taken significant steps over the past three years to secure the state's computer systems and ensure continuity of operations in the case of a tragedy. Office of Information Technology provisions digital data and identification of opportunities for establishing, organizing and enhancing data necessary to improve identification and mitigation of natural hazards
Program	The Office of GIS consults with other state agencies to help them integrate GIS technology into their agency operations. GIS technology not only enhances an agency's decision-making abilities, but also helps it deliver services to the public more efficiently and effectively. The following applications were cooperatively developed and are available over the Internet: Business Location Assessment Tool: iMap Delaware River Basin; iMap New Jersey Geology; iMap NJDEP; iMap NJEMS; New Jersey Image Warehouse; New Jersey Geographic Information Network (NJGIN) Explorer; New Jersey HMFA Locator; New Jersey Traffic Counts; Travel Guide; and UCC Target Cities/Municipalities.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	The New Jersey Office of GIS developed NJMapp to help county and municipal governments expand their own GIS capabilities through an incentive program that creates local data nodes on the NJGIN. To date, there are six counties (representing 167 municipalities) and two municipalities that are partners, have provided local data node information. This work supports pre-hazard mitigation.

Agency	The Office of the New Jersey State Climatologist serves as the state focal point for activities pertaining to the climate of New Jersey. Dr. David A. Robinson, New Jersey State Climatologist, directs the Office, which resides within the Center for Environmental Prediction in the New Jersey Agricultural Experiment Station at Cook College, Rutgers University. The responsibilities of the Office are to collect and archive climate data, maintain an active research program pertaining to New Jersey climate and, through various outreach programs, provide climate education, and information to the citizens of New Jersey. These are spelled out in some detail below.
Program	Research program: Undertake basic or applied research within the Office of the State Climatologist. Examples of basic research range from developing thunderstorm climatology to investigating past and potential future climate change across New Jersey. Applied research deals with the impact or importance of the climate as it pertains to a specific activity in New Jersey, such as agriculture or tourism. Rutgers graduate and undergraduate students play active roles in this research Education and Awareness Program: Promote climate awareness by educating the public through publications, correspondence, personal contact, attendance at conferences, lectures to schools and other organizations (as time and resources permit) and interviews with the print, radio and TV media.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	The State Climatologist provides a New Jersey Weather and Climate Network which has received positive feedback with regard to providing valuable information in times of imminent and active flooding and forest fire. The Office of the New Jersey State Climatologist through our website and outreach programs also helps inform stakeholders as to risks associated with various events that may impact the state. These may include natural and human-induced events. The State Climatologist supports pre-hazard mitigation.

Agency	Meadowlands Commission (NJMC) is a regional zoning and planning agency established by an act of New Jersey State Legislature in 1969. Its founding mandates are to protect the delicate balance of nature, to provide for orderly development, and to manage solid waste activities.
Program	Flood Control Plan: Through the development of the Hackensack Meadowlands Floodplain Management Plan, in cooperation with Meadowlands District municipalities and county governments, the NJMC staff prioritizes flood control initiatives, develops mitigation strategies, and applies for flood mitigation funding through the New Jersey Office of Emergency Management and the Federal Emergency Management Agency. The NJMC participates in the Community Rating System with FEMA to pursue reductions of insurance rates for Meadowlands District property owners.
Effect on Loss Reduction	Help
Funding Available	Allocation of up to $25,000 to each municipality to prepare a Stormwater Pollution Prevention Plan as required by the NJDEP.
Effectiveness	This Commission supports pre-hazard mitigation.
Program	Special Incentives Program: The NJMC provides businesses with information regarding assistance from state and local governments. The NJMC staff also provides information on land use regulations, roads, and utilities.
Effect on Loss Reduction	Facilitate
Funding Available	No
Effectiveness	This Commission supports pre-hazard mitigation.
Program	Municipal Assistance Program: MAP grants provide funding to the 14 Meadowlands District municipalities through the Meadowlands Area Grants for Natural and Economic Transformation (MAGNET) program.
Effect on Loss Reduction	Help

Funding Available	Yes
Effectiveness	To participate in NJMapp, local governments enter into formal partnership agreements with the state and are encouraged to initiate similar partnerships with municipalities within their jurisdictions. This Commission support pre-hazard mitigation.
Program	The Intermunicipal Tax Sharing Program was established to create a fair and equitable method of distributing the benefit and costs of economic development and land use decisions made by the NJMC amongst the 14 Meadowlands District municipalities. The legal basis for the Intermunicipal Tax Sharing Program is contained in Chapter 9 of the New Jersey Meadowlands Commission and Redevelopment Act as amended by Chapter 103, Public Law, 1972. The NJMC receives no money for monies distributed to Meadowlands District from the fund and serves as the routing agent municipalities.
Effect on Loss Reduction	Help
Funding Available	Yes, as a routing agent.
Effectiveness	This Commission supports pre-hazard mitigation.
Program	Meadowlands Environmental Research Institute: MERI staff develops and maintains specific digital mapping systems for the Meadowlands District municipalities. The NJMC has allocated $25,000 for each of the 14 municipalities to come online with Geographic Information System technology, as well as $25,000 to provide each with a tablet PC. Geographic Information System maps include data on the following: Lot information; Owner information; Zoning information; Building locations and footprints; Sewer line locations; Utility locations; Fire hydrant locations; Wetlands locations; Flood hazard areas; Right-to-know information; hazardous materials locations; MERI trains municipalities in the use of technology with customized manuals, tests, fieldwork, and refresher courses.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This Commission supports pre-hazard mitigation.
Program	NJMC staff design parks, trails, greenways and outdoor facilities for public access, environmental education, and the conservation and enhancement of wildlife habitats. The NJMC has overseen the construction of more than 100 acres of park lands and eight miles of trails in the Meadowlands District utilizing low-impact construction techniques, native plantings, and recycled materials. The NJMC staff is also available to provide advice and consultation regarding municipal park planning, design, management, and grounds keeping both inside and outside of the Meadowlands District boundaries.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This Commission supports pre-hazard mitigation.

Agency	New Jersey Office of Homeland Security and Preparedness: Coordinates emergency response efforts across all levels of government, law enforcement, the emergency management and response community, nonprofit organizations, the private sector and other jurisdictions as necessary, to protect the people of New Jersey. The new office now comprises the state Office of Counter-Terrorism and the New Jersey Domestic Security Preparedness Task Force.
Program	EOP: Provides for the States Basic EOP Plan including 15 ESFs. Both the Basic Plan and the ESF plan for all phases of emergency management and one of those phases is mitigation.
Effect on Loss Reduction	Help
Funding Available	No, grants are available more for preparedness rather than mitigation
Effectiveness	The EOP provides for coordinated planning efforts for Local and State Emergency Management following prescribed emergency Support Functions. Mitigation is a section that is reviewed by each organization and once they begin the work, will draw attention to potential mitigation measures. This Office supports pre-hazard mitigation.

Agency	The New Jersey Pinelands Commission: Preserves, protects, and enhances the natural and cultural resources of the Pinelands National Reserve, and to encourage compatible economic and other human activities consistent with that purpose. Today, the Pinelands is protected and its future development guided by the Pinelands Comprehensive Management Plan. The plan is administered by the New Jersey Pinelands Commission in cooperation with units of local, state and federal governments.
Program	Policy and Implementation Committee: The committee reviews the following: determination of consistency of municipal and county ordinances, master plans and land use proposals with the CMP; proposal and adoption of Comprehensive Management Plan (CMP) amendments (both those proposed by the Commission and those resulting from external petitions for amendment); CMP five-year review; planning issues (infrastructure, watersheds (water quality/use), map/zoning/density changes); oversight of Long Term Economic and Environmental Monitoring Programs, Rural Economic Development Program, Pinelands Excellence Program and Limited Practical Use land acquisition program; nomination of historic districts; determination of cultural resources; and coordination with the Pinelands Development Credit (PDC) Bank of the PDC program.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This committee supports pre-hazard mitigation.
Program	The Permanent Land Protection Committee examines one of the most critical aspects of ecological preservation within the Pinelands, the long-term protection of environmentally, historically, or agriculturally significant tracts of land through fee simple purchase, deed restriction or a variety of other means. In the 1980's, the Commission identified target acquisition areas of roughly 100,000 acres, much of which have been protected. The Committee supports the preservation of remaining target areas and works to identify new areas for protection
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This committee supports pre-hazard mitigation.
Program	The Public and Governmental Programs Committee considers actions by federal, state and local governments that may affect the objectives and/or implementation of the Pinelands Comprehensive Management Plan (CMP). The Committee also considers memoranda of agreement with other public agencies to address unique challenges to implementation of the CMP and to serve the greater good of the Pinelands. The Committee tracks and evaluates legislation that may impact the Pinelands program and works on a variety of other legislative matters including development of legislation. The Committee also provides guidance on the Commission's public communications, outreach, education and interpretation functions and oversees the activities of the Pinelands Education Advisory Council.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This committee supports pre-hazard mitigation.
Program	Geographic Information Systems Laboratory is to provide the spatial information needed to preserve, protect, and enhance the natural and cultural resources of the Pinelands National Reserve, and to encourage compatible economic and other human activities consistent with that purpose.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	This group supports pre hazard mitigation.

Program	The Pinelands Development Credit (PDC) Bank is proud to play a key role in protecting environmentally sensitive areas while working with property owners to promote desirable economic development. The PDC Bank's staff works hard to help landowners and developers benefit from a transferable development rights program that has served as a worldwide model. The agency has assisted Pinelands property owners who wish to harvest (or "sever") the credits for their land and preserve it in perpetuity. Also, developers are using Pinelands Development Credits (PDCs) to increase building densities in the designated regional growth areas, thus achieving efficient use of land and preventing sprawl. Even during times of reduced real estate market activity, residential construction with the use of PDCs flourishes in the Pinelands growth areas, and land values have held better than in other parts of the state.
Effect on Loss Reduction	Help
Funding Available	Yes
Effectiveness	As a result of the PDC program, 50,000 acres of environmentally sensitive forest and farmland in the Pinelands are now permanently protected. This Bank supports pre-hazard mitigation.

Agency	New Jersey Highlands Council represents a 1,250 square mile area in the northwest part of the State and lies within portions of seven counties and includes 88 municipalities. The Highlands is increasingly at risk of being overdeveloped. Within a five year period, the Highlands lost 17,000 acres of forests and 8,000 acres of farmland. Development is threatening the region's significant natural resources and the state's drinking water supply. While growth management efforts by individual municipalities continue under the Municipal Land Use Law, the state legislature determined that a coordinated regional effort is necessary.
Program	The Delaware River Basin Interstate Flood Mitigation Task Force was assembled in October 2006. It is comprised of 32 members from a geographically diverse array of government agencies (legislative, executive, federal, state and local), private businesses and not-for-profit Organizations. The group has identified a total of 44 consensus recommendations for a proactive, sustainable, and systematic approach to flood damage reduction. The recommendations are based upon a set of six guiding principles concerning floodplain restoration, floodplain protection, institutional and individual preparedness, local stormwater management and engineering standards, and the use of structural and non-structural measures.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	Because the plan has not been implemented, it is difficult to assess effectiveness or to demonstrate effect on loss reduction. This committee supports pre-hazard mitigation.

Agency	The Delaware River Basin Commission (DRBC) was formed in 1954 with a consent decree signed between New York, New Jersey, Pennsylvania and Delaware. The Commission plans, regulates and analyses the 330 miles of the Delaware River that winds through these states.
Program	The Delaware River Basin Interstate Flood Mitigation Task Force was assembled in October 2006. It is comprised of 32 members from a geographically diverse array of government agencies (legislative, executive, federal, state and local), private businesses and not-for-profit Organizations. The group has identified a total of 44 consensus recommendations for a proactive, sustainable, and systematic approach to flood damage reduction. The recommendations are based upon a set of six guiding principles concerning floodplain restoration, floodplain protection, institutional and individual preparedness, local stormwater management and engineering standards, and the use of structural and non-structural measures.

Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	Because the plan has not been implemented, it is difficult to assess effectiveness or to demonstrate effect on loss reduction. This commission supports pre- and-post hazard mitigation.

Agency	The New Jersey Flood Task Force provided statewide recommendations to improve and strengthen regulatory protections of floodplains and homes; to aggressively pursue mitigation and control measures through improved studies, forecasting and flood warning systems; to request funding for planning and additional resources dedicated to reduce flood risk in New Jersey; and to improve assistance for New Jersey residents before and after a flooding event takes place.
Program	As a result of the multiple flooding events that occurred on the Delaware River in 2004-2006, The Task Force was called to analyze state flooding issues. The Task Force has three subcommittees, financial, public awareness, and technical.
Effect on Loss Reduction	Help
Funding Available	No
Effectiveness	The Task Force was instrumental in reviewing and providing comments for the new Flood Control Act regulations and supports pre and post hazard mitigation. The Governor relies on the Task Force as an Advisory body for flooding issues.

Agency	The New Jersey Environmental Infrastructure Trust provides low-cost financing for the construction of environmental infrastructure projects that enhance and protect ground and surface water resources, ensure the safety of drinking water supplies, and make possible responsible and sustainable economic development.
Program	The Financing Program provides loans to local government units for the construction of wastewater treatment facilities, sludge management systems for wastewater and water treatment systems, combined sewer overflow abatement, stormwater, and other non-point source management projects. The financing program also provides loans to both publicly and privately owned drinking water systems for the construction or upgrade of drinking water facilities, transmission and distribution systems, storage facilities, and source development.
Effect on Loss Reduction	Facilitates
Funding Available	Yes
Effectiveness	This program supports pre-hazard mitigation.

Agency	The Garden State Preservation Trust is the *financing authority* that provides the funds to preserve forests and meadows, watersheds and wildlife habitats, parks and sports fields, working farms, agricultural landscapes, and historic structures.
Program	The Garden State Preservation Trust leverages this $98 million in constitutionally dedicated funds to issue bonds and to make the maximum dollars available. Today, New Jersey has the largest preservation program in the nation for a geographic area of this size. It is financed with Garden State Preservation Trust funds through three partnering agencies: The Green Acres Program, a division of the Department of Environmental Protection to preserve natural lands and recreational parks. The Farmland Preservation Program, administered by the independent State Agriculture Development Committee to acquire the development rights on privately owned farmland. Historic Preservation, administered by the independent New Jersey Historic Trust to provide matching grants to save important historic buildings.

Effect on Loss Reduction	Help
Funding Available	Yes, provides funds to help develop area for revitalization which may be in conflict with mitigation.
Effectiveness	By providing a source of matching funds in acquisition programs in both pre-disaster prevention and post disaster recovery. Since the 2005 State Plan, three communities involving six-nine residences have utilized Green Acres funds as the local match. This Trust Fund supports pre hazard mitigation.

F.3 Funding Sources Available for Mitigation Activities

In addition to identifying and evaluating the state's capabilities to address mitigation, another key component to mitigation is funding. Table F.2-3 summarizes funding sources available through state and federal sources, potential availability, applicability of pre- or post-disaster requirements, and the type of funding that is available.

Table F.3-1: Funding Sources Available for Mitigation Activities
(Source: New Jersey SHMPU, 2008)

Funding Source	Description
FMA	See Table F.3-2
HMGP	See Table F.3-2
PDM	See Table F.3-2
SRL	See Table F.3-2
RFC	See Table F.3-2
Fire Management Assistance Grant Program	Availability: Post-Disaster Description: Assistance for the mitigation, management, and control of fires on publicly or privately owned forests or grasslands, which threaten such destruction as would constitute a major disaster. Funding:
The Community Development Block Grant (CDBG)	Availability: Pre- or Post-Disaster Description: Federal grant provided to CDBG "entitlement communities" (typically municipalities with populations over 50,000 and urban counties with populations over 200,000) and to all states. Funding: Varies
Reimbursement for Firefighting on Federal Property	Availability: Post-Disaster Description: Provides reimbursement only for direct costs and losses over and above normal operating costs. Funding:
National Dam Safety Program	Availability: Pre-Disaster Description: National Dam Safety Program (NDSP). The NDSP, which is led by FEMA, is a partnership of the states, federal agencies, and other stakeholders to encourage individual and community responsibility for dam safety. The NDSP, which was formally established by the Water Resources and Development Act of 1996, includes: Funding: Grant Assistance to the states: Provides vital support for the improvement of the state dam safety programs that regulate most of the 79,500 dams in the United States.
Land and Water Conservation Fund (LWCF)	Availability: To states, local and conservation organizations Description: Funding to States for outdoor recreational development, renovation, land acquisition and planning. Funding: LWCF is authorized at $900 million annually, a level that has been met only twice during the program's 40-year history. The program is divided into two distinct funding pots: state grants and federal acquisition funds. In FY 2005, the federal acquisition pot received $166 million and the state grants program received $92.5 million for a total of $258.5 million. In FY 2006 the federal pot received $114.5 and the state grants received $30 million. FY 2007 was similar to the year before receiving $113 million for federal

Funding Source	Description
	acquisition and $30 million for state grants.
The Forest Legacy Program (FLP)	Availability: Participation in Forest Legacy is limited to private forest landowners. Description: Federal program in partnership with states, supportsstate efforts to protect environmentally sensitive forest lands. Designed to encourage the protection of privately owned forest lands, FLP is an entirely voluntary program. To maximize the public benefits it achieves, the program focuses on the acquisition of partial interests in privately owned forest lands. FLP helps the states develop and carry out their forest conservation plans. It encourages and supports acquisition of conservation easements, legally binding agreements transferring a negotiated set of property rights from one party to another, without removing the property from private ownership. Most FLP conservation easements restrict development, require sustainable forestry practices, and protect other values. Funding: To qualify, landowners are required to prepare a multiple resource management plan as part of the conservation easement acquisition. The federal government may fund up to 75% of project costs, with at least 25% coming from private, state, or local sources. In addition to gains associated with the sale or donation of property rights, many landowners also benefit from reduced taxes associated with limits placed on land use. In 2008, New Jersey has one project funded: Sparta Mountain South $2,474,000.
Transportation Trust Fund	Availability: Pre- and Post-Disaster Description: Grants are funded by the Transportation Trust Fund (TTF) through a competitive application based process administered by the Local Aid District Offices. Funding: $78.75M in TTF funding was available in the FY 2008 Municipal Aid Program. Description: County Aid Program- Administer the County Aid Program for road and bridge infrastructure improvements under county jurisdiction. Each County receives an annual formula based allotment that takes into consideration county road lane mileage and population. The County Aid Program is funded through the Transportation Trust Fund and provides funding for eligible costs of projects included in the county's approved Annual Transportation Program. Funding: $78. 75M in TTF funding was available in the FY 2008 County Aid Program.
Environmental Infrastructure Financing Program	Availability: Pre- or Post-Disaster Description: Borrowers receive loans in two equal parts: Approximately one half to three quarters comes from a zero interest State Revolving Fund maintained by the NJDEP. The other portion comes from proceeds of highly rated tax-exempt revenue bonds sold by the Trust. Combining these two funds results in a loan that is 50% to 75% lower than traditional loan rates. Funding: Is available for qualified borrowers.
Pinelands Infrastructure Trust Fund	Availability: Pre- or Post-Disaster Description: This program provides funding for infrastructure projects needed to accommodate existing and future needs in the 23 designated Pinelands Regional Growth Areas. Funding: Funding is available for the construction of new collection systems, interceptors, and the expansion/upgrade of wastewater treatment facilities. Projects certified under this program generally receive a grant for 40% of the allowable project costs and a loan for 20% of the allowable project costs from the Department. Loans for the remaining project costs may also be received from the Trust.
Meadowlands Infrastructure Trust Fund	Availability: Pre- or Post-Disaster Description: is a regional zoning and planning agency established by an act of New Jersey State Legislature in 1969. Its founding mandates are to protect the delicate balance of nature, to provide for orderly development, and to manage solid waste activities. Funding: Grants available for stormwater management, updating GIS systems, affordable housing planning, and solid waste disposal for the counties and municipalities that are under this Commission.
Green Acres Program	Availability: Pre- or Post-Disaster Description: The Garden State Preservation Trust leverages this $98 million in constitutionally dedicated funds to issue bonds and to make the maximum dollars available.Today, New Jersey has the largest preservation program in the nation for a geographic area of this size. It is financed with Garden State Preservation Trust funds through three partnering agencies: The Green Acres Program, a division of the NJDEP to

Funding Source	Description
	preserve natural lands and recreational parks. The Farmland Preservation Program, administered by the independent State Agriculture Development Committee to acquire the development rights on privately owned farmland. Historic Preservation, administered by the independent New Jersey Historic Trust to provide matching grants to save important historic buildings. Funding: Garden State Preservation Trust Fund Account (Trust Fund) which will receive $98 million annually for 10 years. From FY 2010 through and including FY 2029, debt service on the bonds shall be satisfied by funds deposited into the trust fund from the general fund. These funds will not exceed $98 million during a Fiscal Year. The bill will allow projects funded under the Trust Fund to begin immediately by allowing $90 million to be appropriated through the appropriations act for FY 2000.
NJ Small Communities Development Block Grants	Availability: Pre- or Post-Disaster Description: Provide funds for economic development, housing rehabilitation, community revitalization and public facilities designated to benefit people of low and moderate-income or to address recent local needs for which no other source of funding is available to non-entitlement Counties and Municipalities. Funding: Varies
NJ Open Space Program	Availability: To counties and municipalities that have passed a tax assessment on property owners to help purchase land in their community. Description: 53 towns and 13 counties collect one to five cents on each $100 of assessed property value. State law requires that the money go to a dedicated trust fund for open space and parks, farmland development easements and historic preservation. Funding: Varies based on county tax amount and assessments of property.
New Jersey Conservation Foundation (NJCF)	Description: NJCF is a private, not-for-profit organization. Through acquisition and stewardship NJCF protects strategic lands, promotes strong land use policies, and forges partnerships to achieve conservation goals. Since 1960, NJCF has protected over 100,000 acres of natural areas and farmland in New Jersey–from the Highlands to the Pine Barrens to the Delaware Bay, from farms to forests to urban and suburban parks. Funding: Provides support through knowing and understanding the many type of grants and programs that exist to help fund land preservation activities.

FEMA currently offers five hazard mitigation assistance programs: the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation program, the Flood Mitigation Assistance program, the Severe Repetitive Loss pilot program and the Repetitive Flood Claims program. Although all five programs have unique statutory authorities, program requirements and triggers for funding, all of the programs also have the common goal of providing funds to states and local communities to reduce the loss of life and property from future natural hazard events. Tables F.3-2 and F.3-3 illustrate the similarities and differences among the grant programs.

Table F.3-2: Comparison of Section 404 (HMGP) to Section 406 (PA) Hazard Mitigation Grants
(Sources: FEMA, James Lee Witt Associates)

	Section 404	Section 406
Administration	State	FEMA
Funding source	Hazard Mitigation Grant Program (HMGP)	Public Assistance (PA) grant program
Application process	Application must go through HMGP review process	Application is part of PA review process
Funding uses	Usable on any facility	Limited to damaged facilities
	Usable for structural and non-structural measures	Limited to structural measures
	Usable for any mitigation purpose	Usable only for repair of immediate damages to a facility or element
	Usable anywhere in the state	Limited to declared disaster areas
Benefit Cost Analysis (BCA) criteria	Entire project must be cost-effective per FEMA BCA module	If <15% of the total project cost are mitigation measures under PA, a project may be given administrative approval by the FEMA project officer
Linkage to hazard mitigation benefits	Cost-effectiveness can be linked to any hazard mitigation benefit	Cost effectiveness (if mitigation is >15% of project cost) must be linked to mitigating the damages actually being repaired
Total award	Total award limited by a formula based on total eligible disaster-related Public Assistance and Individual Assistance grant programs	No limit to total award

Table F.3-3: Comparison of FEMA Mitigation Grants
(Source: FEMA Mitigation Division, March 2007)

(See table on following 10 pages.)

F.4 Municipal Capability Assessment Survey

As described in Section 8, a survey was administered to the municipalities in the course of this planning process. The survey questions and summary survey results follow.

3a. How long have you held your current position?

Answer Options	Response Percent
Less than 6 months	0.0%
Between 6 months and 1 year	0.0%
Between 1 year and 3 years	13.6%
Between 3 years and 5 years	18.2%
Between 5 years and 10 years	27.3%
Between 10 years and 15 years	31.8%
Between 15 years and 20 years	9.1%
More than 20 years	0.0%

answered question	22
skipped question	0

3b. Describe the education degrees, professional certifications and/or professional experience that are most relevant in your current role:

Open-Ended Response	
Respondents provided a wide array of responses, however consistent responses were mentioned in the following categories:	
Fire, Law Enforcement, or EMT training	57.1%
College	52.4%
FEMA related courses/ICS Training	42.9%

*Many respondents provided multiple responses therefore percentages should not be weighed against the others.

3c. Describe any other relevant expertise (finance, engineering, planning, etc.):

Open-Ended Response	
Respondents provided a wide array of responses, however consistent responses were mentioned in the following categories:	
Fire, Law enforcement, or EMT experience	54.6%

3d. In regards to staffing:

How many staff do you directly oversee?													
Answer Options	0	1	2	3	4	5	6-10	11-15	16-20	21-30	31-50	More than 50	Don't know
Full-time employee(s)	54.5%	9.1%	0.0%	0.0%	4.5%	0.0%	4.5%	4.5%	9.1%	4.5%	4.5%	4.5%	0.0%
Contractor(s)	86.4%	0.0%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%

How many of the staff whom you oversee work directly in hazard mitigation?													
Answer Options	0	1	2	3	4	5	6-10	11-15	16-20	21-30	31-50	More than 50	Don't know
Full-time employee(s)	72.7%	9.1%	4.5%	4.5%	0.0%	0.0%	9.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Contractor(s)	86.4%	0.0%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%

answered question	22
skipped question	0

3e. How many of your staff have training or expertise directly relevant to hazard mitigation?

Answer Options	Response Percent
0	50.0%
1	13.6%
2	9.1%
3	9.1%
4	4.5%
5	4.5%
6-10	4.5%
11-15	0.0%
16-20	0.0%
21-30	0.0%
31-50	0.0%
More than 50	0.0%
Don't know	4.5%

answered question	22
skipped question	0

3f. Do staff in other departments/agencies/offices in your municipal also work in a hazard-mitigation capacity?

Answer Options	Response Percent
Yes	45.5%
No	45.5%
Don't know	9.1%

answered question	22
skipped question	0

4a. In what department(s), agency(ies), or office(s) are they located?
(Check all that apply)

Answer Options	Response Percent
Department of Environmental Protection/Quality	0.0%
Planning Department	30.0%
Department of Public Works	90.0%
Building Department	30.0%
Office of Emergency Management	40.0%
Other	30.0%

answered question	10
skipped question	12

4b. How many total staff are in these other offices?

Answer Options	Response Percent
0	0.0%
1	0.0%
2	20.0%
3	20.0%
4	0.0%
5	0.0%
6-10	30.0%
11-15	0.0%
16-20	0.0%
21-30	10.0%
31-50	10.0%
More than 50	0.0%
Don't know	10.0%

answered question	10
skipped question	12

4c. How do you regularly communicate with the staff in these other offices?

Open-Ended Response	
Respondents provided a wide array of responses, however consistent responses were mentioned in the following categories:	
Daily through email/phone/face to face	80.0%

5a. Does your office use GIS data?

Answer Options	Response Percent
Yes	36.4%
No	40.9%
Don't know	22.7%

answered question	22
skipped question	0

6a. Does your municipality house its own GIS?

Answer Options	Response Percent
Yes	0.0%
No	57.1%
Don't know	42.9%

answered question	14
skipped question	8

7a. What hazard-mitigation purposes, specifically, is the GIS data used for?

Open-Ended Response
Only three respondents answered this question. They were:
For planning and Financing
assessor, community development
Floodplain mapping, population density and building growth

7b. Where is this data located?

Answer Options	Response Percent
Respondent's office	50.0%
Somewhere else	50.0%

answered question	8
skipped question	14

8a. Where is GIS data housed? Check all that apply.

Answer Options	Response Percent
Other Municipal Office (please specify below)	25.0%
Other County Office (please specify below)	75.0%
Other (please specify below)	0.0%

answered question	4
skipped question	18

9a. How many staff are devoted to operating, updating and maintaining your GIS?

Answer Options	Response Percent
0	62.5%
1	0.0%
2	25.0%
3	0.0%
4	0.0%
5	0.0%
6-10	0.0%
11-15	0.0%
16-20	0.0%
21-30	0.0%
31-50	0.0%
More than 50	0.0%
Don't know	12.5%

answered question	8
skipped question	14

9b. What is your annual budget for GIS staff and technology?

Answer Options	Response Percent
Less than $1,000	62.5%
$1,000-$5,000	0.0%
$5,001-$10,000	0.0%
$10,001-$20,000	0.0%
$20,001-$30,000	12.5%
$31,000-$40,000	0.0%
$41,000-$50,000	0.0%
$51,000-$100,000	0.0%
More than $100,000	12.5%
Don't know	12.5%

answered question	8
skipped question	14

11a. Please indicate your familiarity with the following FEMA mitigation funding sources:
(1=Never heard of it, 5=Very familiar)

Answer Options	1	2	3	4	5
Public Assistance (PA) program (a/k/a Stafford Act, Sec 406)	14.3%	14.3%	42.9%	7.1%	21.4%
Hazard Mitigation Grant Program (HMGP) (a/k/a Stafford Act, Sec. 404)	7.1%	21.4%	28.6%	7.1%	35.7%
Pre-Disaster Mitigation (PDM) program	7.1%	7.1%	50.0%	14.3%	21.4%
Flood Mitigation Assistance (FMA) program	7.1%	21.4%	50.0%	7.1%	14.3%
Severe Repetitive Loss (SRL) program	42.9%	21.4%	28.6%	0.0%	7.1%
Repetitive Flood Claim (RFC) program	42.9%	21.4%	21.4%	7.1%	7.1%

answered question	14
skipped question	8

11b. Please indicate whether your municipality has received funding from the following FEMA mitigation funding sources:

Answer Options	Yes	No	Don't know
Public Assistance (PA) program (a/k/a Stafford Act, Sec. 406)	14.3%	57.1%	28.6%
Hazard Mitigation Grant Program (HMGP) (a/k/a Stafford Act, Sec. 404)	0.0%	71.4%	28.6%
Pre-Disaster Mitigation (PDM) program	14.3%	57.1%	28.6%
Flood Mitigation Assistance (FMA) program	7.1%	78.6%	14.3%
Severe Repetitive Loss (SRL) program	0.0%	78.6%	21.4%
Repetitive Flood Claim (RFC) program	0.0%	71.4%	28.6%

answered question	14
skipped question	8

11c. How much total federal, state, and local funding was spent in your municipality on hazard mitigation activities from 1998-2007?

Answer Options	Less than $1,000	$1,000-$5,000	$5,001-$10,000	$10,001-$50,000	$50,001-$100,000	More than $100,000	Don't know
Federal	42.9%	0.0%	0.0%	0.0%	7.1%	0.0%	50.0%
State	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%
Local	42.9%	21.4%	0.0%	14.3%	0.0%	0.0%	21.4%

answered question	14
skipped question	8

11d. Does someone in your office have experience with hazard mitigation grants:

Answer Options	Yes	No
Grant writing	35.7%	64.3%
Grant administration	42.9%	57.1%

answered question	14
skipped question	8

11e. How much time (hours per week) could staff in your office devote to management of hazard mitigation grants?

Answer Options	Response Percent
0-5	85.7%
6-10	0.0%
11-20	14.3%
21-30	0.0%
31-40	0.0%
41-80	0.0%
More than 80	0.0%

answered question	14
skipped question	8

11f. Is there an office other than yours that would be a preferable location for the management of hazard mitigation grants?

Answer Options	Response Percent
Yes	28.6%
No	71.4%

answered question	14
skipped question	8

12a. Does your municipality have an active hazard mitigation program?

Answer Options	Response Percent
Yes	13.6%
No	86.4%

answered question	22
skipped question	0

13a. Please describe any plans or regulations in your municipality that may (unintentionally) hinder hazard mitigation efforts (for example: historic preservation regulati

Open-Ended Response
Only two respondents answered this question. They were:
No funding
Planning reviews

13b. Of the programs, actions, or activities your municipality has participated in, which have been less effective than others at reducing losses in your municipality?

Open-Ended Response
No respondents answered this question.

13c. Why do you believe these programs have been less effective?

Open-Ended Response
Only one respondent answered this question which included no funding.

13d. Of the mitigation programs, actions, and activities your municipality has participated in, which have been the most effective in reducing losses in your municipality?

Open-Ended Response
No respondents answered this question.

13e. What makes these programs effective?

Open-Ended Response
Only one respondent answered this question which included funding.

13f. Based on the lessons you and your municipality have learned with these hazard mitigation programs, actions, or activities, what advice would you provide to other j

Open-Ended Response
Only two respondents answered this question. They were:
Preparedness, training, exercising
Financing

13g. What types of mitigation programs, policies, or actions that are not currently being implemented in your municipality do you believe would be successful in reducing losses if they were implemented?

Open-Ended Response
Only one respondent answered this question which included drainage projects.

14a. Does your office work with other partners on hazard mitigation efforts?

Answer Options	Response Percent
Yes	63.6%
No	36.4%

answered question	22
skipped question	0

15a. Please list other offices/agencies within your municipality with which your office works directly in order to plan and/or implement hazard mitigation: (Check all that apply)

Answer Options	Response Percent
Department of Environmental Protection/Quality	14.3%
Planning Department	28.6%
Department of Public Works	78.6%
Building Department	57.1%
Office of Emergency Management	71.4%
Other	28.6%

answered question	14
skipped question	8

15b. Please list any neighboring jurisdictions with which your office works directly in order to plan and/or implement hazard mitigation:

Open-Ended Response	
Respondents provided a wide array of responses, however consistent responses were mentioned in the following categories:	
Neighboring municipalities	62.5%
Neighboring counties	37.5%

15c. Please list any departments, agencies, or commissions at the following levels of government with which your office works directly in order to plan and/or implement hazard mitigation:

Answer Options	Response Percent
County	100.0%
Regional	23.1%
State	84.6%
Federal	30.8%

answered question	13
skipped question	9

15d. Of all the partners you listed above, which are the most valuable relationships in terms of effective hazard mitigation?

Open-Ended Response	
Respondents provided a wide array of responses, however consistent responses were mentioned in the following categories:	
County OEM	84.6%

15e. Are there potential partners with whom you do not currently work that you believe might be useful in helping your municipality effectively mitigate hazard?

Response
Respondents provided a wide array of responses that did not show consistency. No further analysis conducted.

16a. Does your municipality have a hazard mitigation or flood mitigation plan?

Answer Options	Response Percent
Yes	36.4%
No	31.8%
Don't know	31.8%

answered question	22
skipped question	0

16b. What agency oversees the capital improvement program (CIP) in your municipality?

Open-Ended Response	
Respondents provided a wide array of responses, however consistent responses were mentioned in the following categories:	
Township committee/Administration/Mayor	76.5%

16c. In regards to your capital improvement program:

Answer Options	Yes	No	Don't know
Are hazard mitigation projects generally considered as part of the CIP process?	13.6%	27.3%	59.1%
Are CIP projects systematically assessed for hazard mitigation implications?	4.5%	36.4%	59.1%

answered question	22
skipped question	0

16d. How many staff does your municipality employ for CIP implementation?

Answer Options	0	1	2	3	4	5	6-10	11-15	16-20	21-30	31-50	More than 50	Don't know
Engineers	27.3%	36.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.8%
Project managers	45.5%	9.1%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	40.9%
Construction labor	50.0%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%	0.0%	0.0%	40.9%
Other	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%

answered question	22
skipped question	0

17a. Is your municipality enforcing the rules associated with the Freshwater Wetland Protection Act (NJSA 13 B:1, NJAC 7:7A)?

Answer Options	Response Percent
Yes	36.4%
No	4.5%
Don't know	59.1%

answered question	22
skipped question	0

18a. What department or agency administers freshwater wetland protection in your municipality?

Answer Options	Response Percent
Department of Environmental Protection/Quality	25.0%
Planning Department	62.5%
Department of Public Works	25.0%
Building Department	50.0%
Office of Emergency Management	25.0%
Other	12.5%

answered question	8
skipped question	14

18b. Are wetland protection-related permitting decisions ever overruled in your municipality?

Answer Options	Response Percent
Yes	0.0%
No	25.0%
Don't know	75.0%

answered question	8
skipped question	14

19a. Is your municipality enforcing the Flood Hazard Control Act (NJSA 58:16A-52, NJAC 7:13)?

Answer Options	Response Percent
Yes	22.7%
No	9.1%
Don't know	68.2%

answered question	22
skipped question	0

20a. What department or agency administers floodplain management in your municipality?

Answer Options	Response Percent
Department of Environmental Protection/Quality	0.0%
Planning Department	20.0%
Department of Public Works	40.0%
Building Department	20.0%
Office of Emergency Management	40.0%
Other	0.0%

answered question	5
skipped question	17

20b. Are floodplain-related permitting decisions ever overruled/ignored in your municipality?

Answer Options	Response Percent
Yes	0.0%
No	60.0%
Don't know	40.0%

answered question	5
skipped question	17

21a. Does your municipality use funds through the Green Acres (NJSA 13:8A 19-55 and 8B 1-9, NJAC 7:36) or Blue Acres programs?

Answer Options	Response Percent
Yes	63.6%
No	13.6%
Don't know	22.7%

answered question	22
skipped question	0

22a. What department or agency administers Green/Blue Acres funds in your municipality?

Answer Options	Response Percent
Department of Environmental Protection/Quality	7.1%
Planning Department	42.9%
Department of Public Works	21.4%
Building Department	7.1%
Office of Emergency Management	0.0%
Other	42.9%

answered question	14
skipped question	8

22b. Are Green/Blue Acres funds used for:
(Check all that apply)

Answer Options	Response Percent
Scenic/conservation landscape	73.3%
Hazard Mitigation	0.0%
Don't know	26.7%

answered question	15
skipped question	7

24a. Does your comprehensive plan include policies that:

Answer Options	Yes	No	Don't know
zone for low-intensity uses in areas of high vulnerability to hazards?	50.0%	25.0%	25.0%
enforce set-backs from hazards, including flood areas, steep slopes, etc.?	87.5%	12.5%	0.0%
acquire or dedicate green space in areas of high vulnerability to hazards?	37.5%	37.5%	25.0%
locate capital improvements and public buildings away from areas of high vulnerability to hazards?	37.5%	37.5%	25.0%
reduce vulnerability of existing structures in hazardous areas (including retrofitting or relocating)?	37.5%	37.5%	25.0%
Is hazard mitigation addressed in other ways in your comprehensive plan?	12.5%	25.0%	62.5%

answered question	8
skipped question	14

26a. Does your zoning ordinance include policies that:

Answer Options	Yes	No	Don't know
code for low-intensity uses in areas of high vulnerability to hazards?	36.8%	10.5%	52.6%
require set-backs from hazards, including flood areas, steep slopes, etc.?	68.4%	5.3%	26.3%
code allow for cluster development and/or other flexible site-planning strategies that can help reduce development in hazard areas?	52.6%	5.3%	42.1%
Is hazard mitigation addressed in other ways in your zoning ordinance?	10.5%	10.5%	78.9%

answered question	19
skipped question	3

28a. Does your subdivision ordinance include:

Answer Options	Yes	No	Don't know
mechanisms to achieve low-intensity uses in areas of high vulnerability to hazards?	45.5%	18.2%	36.4%
requirements for set-backs from hazards, including flood areas, steep slopes, etc.?	81.8%	9.1%	9.1%
encouragement for dedication of green space in areas of high vulnerability to hazards?	81.8%	9.1%	9.1%
allowance for cluster development and/or other flexible site-planning strategies that can help reduce development in hazard areas?	81.8%	9.1%	9.1%
Is hazard mitigation addressed in other ways in your subdivision ordinance?	0.0%	18.2%	81.8%

answered question	11
skipped question	11

29a. What department in your municipality oversees building code enforcement?

Answer Options	Response Percent
Building Department	63.6%
Permitting Department	9.1%
Engineering Department	0.0%
Other	27.3%

answered question	22
skipped question	0

29b. How many staff work directly with building code enforcement?

Answer Options	Response Percent
0	9.1%
1	13.6%
2	22.7%
3	13.6%
4	0.0%
5	13.6%
6-10	18.2%
11-15	0.0%
16-20	0.0%
21-30	0.0%
31-50	0.0%
More than 50	0.0%
Don't know	9.1%

answered question	22
skipped question	0

29c. What type of training does building code enforcement staff receive?

Open-Ended Response
All respondents mentioned State Certification.

30a. Please list any other plans or land development regulations in your municipality that are intended to manage risk or mitigate hazard:

Open-Ended Response
Only two respondents answered this question. They were:
Municipal EOP
Master plan etc.

30b. Does your municipality have public education programs related to hazard mitigation:

Answer Options	Yes	No	Don't know
Of a general nature related to flood or other hazards?	18.2%	50.0%	31.8%
That provide site-specific hazard information to property owners or prospective property owners?	9.1%	54.5%	36.4%

answered question	22
skipped question	0

F.5 Citizen Survey

As described in Section 8, a survey was administered to county citizens in the course of this planning process. The survey questions follow.

Note: Due to the few responses received, analysis conducted did not produce what should be considered comprehensive results.

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Appendix G
STAPLEE Analysis of Mitigation Actions

Section 9 identified specific actions to achieve identified goals, an appropriate responsible party for each action, a schedule for accomplishment, suggested funding sources and priority rankings. The tables contained within this appendix provide the detailed basis for this initial prioritization of the actions.

In drafting this initial prioritization, the GC OEM, consultant, and participating municipalities worked cooperatively to determine which STAPLEE criteria each action did or was likely to meet. The criteria that were considered "met" are identified with a "+", and the criteria that were not considered met are identified with a "0". The methodology also allows for a "-" designation when impacts are expected to be negative, but none of the projects below required it at this time. The participants in this process have defined High, Medium, and Low priorities to be assigned as follows:

- High: Meets five of the seven STAPLEE criteria
- Medium: Meets four of the seven STAPLEE criteria
- Low: Meets three of the seven STAPLEE criteria

This prioritization is considered preliminary and will be revisited in the future by the GC OEM and the participating municipalities as funding becomes available. The process by which these priorities will be revisited is described in Section 9.4.

Table G.1
Prioritization of Gloucester County Hazard Mitigation Goals, Objectives, and General Actions

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
1.A.1: Develop *All Hazards* public education and outreach program for hazard mitigation and preparedness.	+	0	+	+	+	+	+	6	High
1.A.2: Initiate a public awareness program on local TV channel for hazard safety.	+	0	0	+	+	0	+	4	Medium
1.A.3: Conduct evacuation exercises with and for local Office of Emergency Management (OEM) personnel and private citizens.	+	0	0	+	+	0	+	4	Medium
1.A.4: Conduct yearly workshops related to FEMA hazard mitigation grant programs, including FMA, HMGP, PDM, SRL, and RFC, with a focus on those aspects available to private firms and property owners (coordinated with Action 1.B.1, below).	+	+	0	+	+	0	+	5	High
1.A.5: Educate the public through NJOEM and New Jersey Forest Fire Service outreach programs and hazard mitigation workshops.	+	+	+	+	+	0	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
1.B.1: Conduct yearly workshops related to FEMA hazard mitigation grant programs, including FMA, HMGP, PDM, SRL, and RFC (coordinated with Action 1.A.4, above).	+	+	0	+	+	0	+	5	High
1.C.1: Reach out to municipal Floodplain Administrators, depts. of planning, public works, engineering, etc. regarding the importance of hazard mitigation planning and provision of municipal plans and data for planning purposes	+	+	+	+	+	+	+	7	High
2.A.1: Develop and maintain relationships with organizations that can provide technical information and/or assistance in the areas of hazard identification and risk assessment.	+	0	0	+	+	0	+	4	Medium
2.A.2: Undertake site-specific studies to better characterize flood risks to areas with extensive flood loss histories (see also municipal actions in Table 9.3.3-1 for additional detail).	+	+	0	+	+	0	+	6	High
2.A.3: Coordinate with state efforts to undertake detailed vulnerability assessments and develop mitigation options for critical facilities in V and VE zones.	+	0	0	+	+	+	+	5	High
2.A.4: Use best possible flood data, including DFIRM and Map Mod data, if available, in next plan update	+	+	+	+	+	+	+	7	High
2.A.5: Continuously update and verify status of repetitive loss and severe repetitive loss lists from the NFIP.	+	+	0	+	+	+	+	6	High
2.A.6: Inventory critical facilities to identify those in geographic areas that may be prone to high ground motion during earthquakes (due to proximity to faults or to soil characteristics), and those with structures that may be at risk during an earthquake.	+	0	0	+	+	0	+	4	Medium
2.A.7: Coordinate with state efforts to prioritize critical facilities and conduct more detailed earthquake risk assessments, taking into account the relative importance of the facility and the level of seismic hazard.	+	+	0	+	+	+	+	6	High
2.A.8: Work with NJGS to determine soil and shake characteristics at specific sites that the county has identified as priority critical facilities with potential vulnerabilities to earthquake forces, and then work with engineers to develop appropriate projects.	+	+	0	+	+	+	+	6	High
2.A.9: Coordinate with NJGS and other county, state, and federal agencies to better identify specific sites in the county that may be exposed to the effects of geo-hazards such as landslides, sinkholes and subsidence.	+	0	0	+	+	0	+	4	Medium
2.A.10: Using a prioritized list of state, county, and local facilities, coordinate with state effort to survey wind vulnerabilities, based on criteria such as age of the facility, value of operations, proximity to the coast, etc.	+	+	0	+	+	0	+	5	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
2.A.11: Conduct wind risk assessments on a limited number of high-priority facilities that appear to be vulnerable to high winds. Assessments will use standard FEMA guidelines, procedures and software, including the wind hazard database.	+	+	0	+	+	0	+	5	High
2.A.12: Coordinate with state efforts to inventory or survey of prioritized areas to determine if there is a need for additional study or data collection related to wildfire and/or urban-interface fires. Focus of inventory/study will be on identifying areas where there exist vulnerable populations or built environment and/or areas where fuel loads and other conditions suggest potential for wildfire risk.	+	+	0	+	+	0	+	5	High
2.A.13: Coordinate with state efforts to maintain current information about fuel loads and conditions that may affect potential for fires.	+	0	0	+	+	0	+	4	High
2.A.14: For areas with significant risk from wildfires or urban interface fires, perform detailed studies to objectively determine (a) the potential for wildfires, including likely magnitude, and (b) vulnerabilities of surrounding populations, built environment and functions.	+	0	0	+	+	0	+	4	Medium
2.A.15: Coordinate with state efforts to conduct wildfire risk assessments for areas and assets that are determined to have the most hazard (fuel load, etc.) potential, and the most vulnerable structures, populations or operations.	+	0	0	+	+	0	+	4	Medium
2.A.16: Maintain effective coordination and information sharing related to hazardous material sites with NJOEM and the Right to Know (RTK) Network.	+	0	0	+	+	0	+	4	Medium
2.A.17: Complete data collection for Geographic Information System (GIS) analysis and mapping of potential areas of impact related to hazardous material sites.	+	+	0	+	+	0	+	5	High
2.A.18: Integrate data about hazardous materials with most current available information about other risk factors, e.g. population, climate, other site-specific characteristics.	+	+	0	+	+	0	+	5	High
2.A.19: Complete a detailed analysis of past losses related to winter storms to determine if additional study is indicated.	+	0	0	+	+	0	+	4	Medium
2.A.20: Undertake a survey of critical facilities to identify and prioritize those that may have structural characteristics that make them vulnerable to excessive snow and ice loads.	+	0	0	+	+	0	+	4	Medium
2.A.21: Complete a detailed analysis of past losses related to nor'easters and other coastal storms to determine if additional study is indicated. Work with state and federal agencies to develop a detailed characterization of erosion history and risks in particular.	+	0	0	+	+	0	+	4	Medium

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
2.A.22: Work with appropriate agencies to identify specific areas that are vulnerable to storm effects, then inventory assets and populations in these areas as the basis for a risk calculation.	+	0	0	+	+	0	+	4	Medium
2.A.23: Work with NJDEP to more fully understand the dam hazard rankings and methodology behind them, particular regarding high-hazard sites.	+	0	0	+	+	0	+	4	Medium
2.A.24: Undertake more detailed engineering studies of dams that may pose risks to the county, based on additional data collected from state or federal agencies.	+	+	0	+	+	0	+	5	High
2.A.25: Conduct detailed risk assessments for dams that appear to have vulnerabilities, and where there is potential for significant damage or loss of life.	+	+	0	+	+	0	+	5	High
2.A.26: Conduct detailed risk assessments for levees which appear to have vulnerabilities, and where there is potential for significant damage or loss of life.	+	+	0	+	+	0	+	5	High
2.A.27: Work with NJDEP and other agencies to compile better information about levees in the State, including inventories, engineering data and any other studies (in particular those that may discuss or catalog past levee failures).	+	0	0	+	+	0	+	4	Medium
2.A.28: Undertake more detailed engineering studies of levees that may pose risks to the county, based on additional data collected from local, State or federal agencies.	+	+	0	+	+	0	+	5	High
2.A.29: Consolidate and incorporate relevant local data related to hazards, extent, probability, exposure, risk, history, etc.	+	+	0	+	+	0	+	5	High
2.B.1: Participate in the Emergency Preparedness Conference and workshops.	+	0	+	+	+	+	+	6	High
2.C.1: Develop a database inventory of critical facilities countywide (county-, local-, and privately-owned), including fire and police stations, medical facilities, major public buildings important for emergency response and recovery, and critical lifeline transportation and utility nodes such as bridges, water treatment plants, wastewater treatment plants, high voltage electric substations, and hazardous materials facilities.	+	+	0	+	+	0	+	5	High
2.C.2: Prioritize critical facilities and complete Phase 1 site surveys to identify vulnerabilities.	+	+	0	+	+	0	+	5	High
3.A.1: Continue working with the State, as well as local jurisdictions, to encourage local cooperation in making Repetitive Loss (RL) (and SRL) property mitigation a high priority, and to offer municipalities technical support in carrying out the requirements of FEMA mitigation programs as well as current information related to RL and SRL properties.	+	+	+	+	+	+	+	7	High
3.A.2: Provide grants information, planning tools, training and technical assistance to increase the number of public and private sector hazard mitigation	+	+	0	+	+	+	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
projects.									
3.A.3: Conduct direct outreach and education to municipal OEMs and other potential participants in Plan maintenance and future Plan updates	+	+	0	+	+	0	+	5	High
3.B.1: Conduct community outreach, workshops and training to increase NFIP participation (coordinate with outreach actions listed under Objectives 1.A and 1.B).	+	+	0	+	+	0	+	5	High
3.B.2: Encourage municipalities to participate in the CRS program, including potentially setting up CRS site visits and/or workshops for interested jurisdictions.	+	+	0	+	+	+	+	6	High
3.B.3: Encourage municipalities to include identification and prioritization of actions related to future participation in and compliance with the NFIP	+	+	0	+	+	+	+	6	High
3.C.1: Encourage enforcement of floodplain management as it relates to new and existing construction by integrating hazard mitigation practices with zoning, subdivision ordinances, comprehensive planning, and other land use tools at the municipal level.	+	+	0	0	+	+	+	5	High
3.C.2: Coordinate with state efforts to encourage the New Jersey League of Municipalities to become more involved in mitigation activities, and in particular to support the activities described in Action 3.C.1 and 3.D.1.	+	0	0	0	+	+	+	4	Medium
3.D.1: Encourage enforcement of floodplain management as it relates to new and existing construction by integrating hazard mitigation practices with zoning, subdivision ordinances, comprehensive planning, other land use tools, and environmental and other regulatory mechanisms via state requirements, reviews, and regulations. Coordinate with the State Planning Commission to integrate the State Development and Redevelopment Plan and the State Hazard Mitigation Plan.	+	+	0	0	+	+	+	5	High
3.E.1: Develop a simple GIS platform, or build upon an existing platform, to maintain and analyze critical facilities inventories and information about hazards.	+	0	0	+	+	0	+	4	Medium
3.F.1: Explore potential for possible regionalization or consolidation of hazard mitigation planning, administration, and/or implementation at the county level	+	+	0	+	+	+	+	6	High
4.A.1: Coordinate with state efforts to develop and implement a detailed severe repetitive loss mitigation strategy that will qualify the county and municipalities for 90:10 cost share under the FEMA SRL program.	+	+	+	+	+	+	+	7	High
4.A.2: Continue working with local and regional jurisdictions to encourage and support their efforts to mitigate RL (and SRL) properties, either individually through the use of cluster solutions and/or basin	+	+	0	+	+	0	+	5	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
projects, as appropriate, and offer technical support in carrying out the requirements of FEMA mitigation programs. (see Table 9.3.3-1 for further detail).									
4.A.3: Implement mitigation projects and programs intended to reduce risk to critical facilities (see Table 9.3.3-1 for further detail).									Varied[1]
4.A.4: Implement other mitigation projects and programs as appropriate at the municipal level (see Table 9.3.3-1 for further detail).									Varied[1]
4.B.1: Integrate hazard mitigation Plan and priorities into floodplain management, zoning, subdivision regulation, and other local regulations as appropriate.	+	+	0	0	+	+	+	5	High
4.B.2: Ensure full and effective enforcement of building codes, floodplain management, zoning, and other risk-reducing regulations.	+	+	0	0	+	+	+	5	High
4.B.3: Integrate hazard mitigation priorities into Capital Improvement Plans, transportation planning, and other capital planning	+	+	0	0	+	+	+	5	High

[1] See the municipality actions below for a ranking.

Note: Projects were ranked with a -,0,+ rating per STAPLEE category. "-" indicates a negative impact, "0" indicates negligible impact, and "+" indicates a positive impact.

Table G.2
Municipality Specific Mitigation Actions

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
CLAYTON BOROUGH									
Clayton 1: Structural retrofit of homes located between North Street and Main Street	+	+	0	+	+	0	+	5	High
Clayton 2: Engineering study to assess risk from Silver Lake Dam located on West Clayton Avenue	+	+	0	0	+	0	0	3	Low
Clayton 3: Engineering study to determine appropriate flood mitigation action and envelope/ improved path structural retrofits of data storage (Clayton Community Recreation Center) on Washington Avenue	+	+	0	+	+	0	+	5	High
Clayton 4: Engineering study to determine appropriate flood mitigation action and envelope/ improved path/ structural retrofits and secure roof ballast of Emergency Operation Center (EOC) and Police (Municipal Building) on Route 47	+	+	0	+	+	0	+	5	High
Clayton 5: Structural retrofit of Rustic Village Apartments - located on Route 47. (Buildings units A-K)	+	0	0	0	+	0	+	3	Low
Clayton 6: Secure roof ballast of shelter (Herma Simmons Elementary School) located on 300 West Chestnut Avenue	+	0	0	0	+	0	+	3	Low
Clayton 7: Critical facilities protection/ hazard threat recognition of hazmat (Propane Tank Farm) located on Delphi Drive Route 47	+	0	0	+	+	0	+	4	Medium
Clayton 8: Critical facilities protection/ hazard threat recognition of hazmat (Aleris Light Aluminum Company)	+	0	0	+	+	0	+	4	Medium
DEPTFORD TOWNSHIP									
Deptford 1: Hardening/ retrofitting EOC facility located in Municipal Building at 1101 Cooper Street	+	0	0	+	+	0	+	4	Medium
Deptford 2: Engineering Assessment to assess risk from Almonesson Lake Dam located on Cooper Street	+	+	0	+	+	0	+	5	High

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
ELK TOWNSHIP									
Elk 1: Engineering Assessment to assess risk from dam located in Lake Garrison on County Road Route 553	+	0	0	+	+	0	0	3	Low
Elk 2: Engineering assessment to assess risk from dam on Lake Gilman on County Road Route 641	+	0	0	+	+	0	0	3	Low
Elk 3: Engineering Assessment to assess risk from Hackney Dam, 431 Richwood Road, County Road/Route 609	+	0	0	+	+	0	0	3	Low
Elk 4: Retrofitting/ hardening of data storage facility located in Municipal Building on County Road, Route 667	+	0	0	+	+	0	+	4	Medium
Elk 5: Engineering Assessment to assess risk from dam on Silver Lake on Route 608 shared with Gilman municipality	+	0	0	+	+	0	0	3	Low
Elk 6: Engineering Assessment to assess risk from Ewan Lake Dam−shared with Harrison municipality	+	0	0	+	+	0	0	3	Low
FRANKLIN TOWNSHIP									
Franklin 1: Engineering study to determine appropriate flood mitigation action for Police/ EOC center (municipality building) Located in floodplain area next to Sharon Lake on Delsea Drive	+	+	0	+	+	+	+	6	High
Franklin 2: Acquisition or floodproofing of houses around Franklin Lake, Iona Lake, McCarty's Lake, and other developed and flood prone lakes in municipality	0	0	0	+	+	0	+	3	Low
Franklin 3: Modify building materials, revisit response and evacuation plans, fire lanes and education for populations in the Pinelands	+	0	0	0	+	0	+	3	Low
Franklin 4: Envelope hardening/secure roof ballast of shelter (Regional High School)	+	0	0	+	+	0	0	3	Low
Franklin 5: Engineering study to access risk and maintenance of Franklin Lake Dam, Iona Lake Dam, and McCarty's Lake Dam	+	+	0	+	+	0	+	5	High
Franklin 6: Critical facilities protection/ hazard threat recognition of hazmat (freight rail carries chlorine behind apartment building of 40-50 families)	+	0	0	0	+	+	0	3	Low
Franklin 7: Critical facilities protection/ hazard threat recognition of hazmat site (Arrow Crop Service Airport)	+	0	0	+	+	0	+	4	Medium

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
GLASSBORO BOROUGH									
Glassboro 1: Engineering study to determine drainage/conveyance on Union Street	+	0	0	+	+	0	+	4	Medium
Glassboro 2: Engineering study to determine flood mitigation action for Police Department	+	0	0	+	+	0	+	4	Medium
Glassboro 3: Critical facilities protection/ hazard threat recognition of hazmat (high pressure lines) running along Union Street, Ellis Street, and Delsea Drive	+	+	0	0	+	0	+	4	Medium
GREENWICH TOWNSHIP									
Greenwich 1: Engineering study to determine appropriate flood mitigation action for EOC/Fire building located on E. Broad Street	+	+	0	+	+	0	+	5	High
Greenwich 2: Engineering study to determine appropriate flood mitigation action for Wastewater Treatment facility located on Washington Street (located in a flood zone)	+	+	0	+	+	0	0	4	Medium
Greenwich 3: Engineering study to determine appropriate flood mitigation action for shelter at Nehaunsey School located on Swedesboro Road	+	+	0	+	+	0	0	4	Medium
Greenwich 4: Engineering study to determine appropriate flood mitigation action for Valero Refinery located at Billingsport Road (in 100-year flood plain area)	+	+	0	+	+	0	+	5	High
HARRISON TOWNSHIP									
Harrison 1: Property acquisition private house located at Ellis Mill Road at Lake Gilman	0	+	0	0	+	0	+	3	Low
Harrison 2: Engineering study to determine appropriate flood mitigation action for Fire/EMS (Harrison Firehouse) located on 312 Ewan Road, Mullica Hill	+	+	0	0	+	0	+	4	Medium
Harrison 3: Engineering study to determine appropriate flood mitigation action for Wastewater Treatment Facility, Woodland Avenue	+	+	0	0	+	0	+	4	Medium
LOGAN TOWNSHIP									
Logan 1: Repaupo Fire Station (shelter) generator/ back-up power	+	0	0	+	+	0	+	4	Medium

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Logan 2: Beckett Fire Station (shelter) generator/ back-up power	+	0	0	+	+	0	+	4	Medium
Logan 3: Address recurring erosion/instability issue at Delaware River/ Repaupo Creek levee (end of Floodgate Rd.)	+	+	0	+	+	0	+	5	High
MANTUA TOWNSHIP									
Mantua 1: Engineering study to assess risk of dam located on Lambs Road and bordering Washington Township	+	+	0	0	+	0	+	4	Medium
Mantua 2: Engineering study to determine appropriate flood mitigation action for Route 45	+	+	0	+	+	0	0	4	Medium
Mantua 3: Engineering study to determine appropriate flood mitigation action for private houses located on Hickory Avenue next to Mantua Creek	+	+	0	+	+	0	+	5	High
Mantua 4: Engineering study to determine appropriate flood mitigation action for police and data storage facility located on Main Street	+	+	0	+	+	0	+	5	High
Mantua 5: Relocate utility lines underground in the southern end of Mantua from Route 45 to Break Neck Road	+	0	+	+	+	0	+	5	High
Mantua 6: Engineering study to determine appropriate flood mitigation action of Water Facility (Harrison Township Waste Water Treatment Facility) located on Woodland Avenue)	+	+	0	+	+	0	0	4	Medium
MONROE TOWNSHIP									
Monroe 1: Engineering study to determine appropriate flood mitigation action in Main Street Area	+	+	0	+	+	0	0	4	Medium
Monroe 2: Building evaluation of EOC located in Municipal Building on 125 Virginia Avenue	+	0	0	+	+	0	+	4	Medium
Monroe 3: Elevation and dry floodproofing of two homes located next to Victory Lake and Timber Lake	+	0	0	+	+	0	0	3	Low
Monroe 4: Fixing one dam located by Victory Lake	+	+	0	+	+	0	+	5	High
Monroe 5: Enhance floodplain management administration, staffing, and process	+	+	0	+	+	0	+	5	High
Monroe 6: Create safety zones around critical facilities in wildfire risk areas	+	+	0	0	0	+	+	4	Medium

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
NATIONAL PARK BOROUGH									
National Park 1: Engineering study to determine appropriate flood mitigation action for 6 private houses on Princeton Avenue (non-RL/SRL)	+	+	0	+	+	0	+	5	High
PAULSBORO BOROUGH									
Paulsboro 1: Engineering study to determine appropriate flood mitigation action for Huff Avenue, Thompson Avenue and the 500 block of Delaware Street	+	0	0	+	+	0	+	4	Medium
PITMAN BOROUGH									
Pitman 1: Engineering study to determine mitigation action for flooding on Howard Avenue, Lakeside Avenue, Lake Avenue, and Pointsett Avenue.	+	0	0	+	+	0	0	3	Low
Pitman 2: Monitor dam failure and flood risk/threat related to Alcyon Dam	+	0	0	+	+	0	0	3	Low
ROWAN UNIVERSITY									
Rowan University 1: Floodproofing, improved conveyance, and drainage of shelter in Recreation Center	+	+	0	+	+	0	+	5	High
Rowan University 2: Construct bulkhead, improve retention, and conveyance of Chestnut Branch Creek	+	+	+	+	+	0	0	5	High
Rowan University 3: Improve drainage of Triad Apartments and Bunce Academic Building	+	+	+	+	+	0	0	5	High
Rowan University 4: Initiatives to evaluate lock down processes, evacuation procedures, emergency communications, and other Homeland Security initiatives relating to campuses	+	+	+	+	+	0	+	6	High
SOUTH HARRISON TOWNSHIP									
South Harrison 1: Engineering study to determine appropriate flood mitigation action and envelope hardening/improved load path for Fire/EMS building, Municipal building, and South Harrison Elementary School located on Main Street	+	0	0	+	+	0	0	3	Low
South Harrison 2: Public education and outreach program for residents in trailer park (between Mullica Hill Road and Cedar Grove) for hurricane/ evacuation strategies	+	0	0	+	+	0	+	4	Medium
South Harrison 3: Assess wind risk to communications tower (repeater tower)	+	0	0	0	+	0	+	3	Low

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
SWEDESBORO BOROUGH									
Swedesboro 1: Engineering study to assess risk for Narraticon Lake Dam	+	0	0	0	+	0	+	3	Low
Swedesboro 2: Engineering study to determine appropriate action related to envelope hardening and improved load path for police station/ Borough Hall located on Kings Highway	+	0	0	0	+	0	+	3	Low
Swedesboro 3: Engineering study to determine appropriate action related to envelope hardening and improved load path for Fire/EMS (Swedesboro fire department) located at Kings Highway and Auburn Road	0	0	0	+	+	0	+	3	Low
WASHINGTON TOWNSHIP									
Washington 1. Engineering evaluation of drainage on Palomar	+	0	0	+	+	+	+	5	High
Washington 2. Improve Spring Lake Road culvert	+	+	0	+	+	+	0	5	High
Washington 3. Engineering evaluation to assess dam on Spring Lake	+	0	0	+	+	+	+	5	High
Washington 4. Stream bank stabilization of Avonbrook Drive	+	+	0	+	+	+	0	5	High
Washington 5: Stream bank stabilization of Hyannis Drive	+	+	0	+	+	+	0	5	High
WENONAH BOROUGH									
Wenonah 1: Risk assessment study of electrical/utility infrastructure in borough	+	0	0	+	+	0	+	4	Medium
Wenonah 2: Threat recognition of railroad tracks carrying chlorine, ethanol, etc. near municipal building, EOC, data storage facility, and firehouse	+	0	+	0	+	+	+	5	High
WEST DEPTFORD TOWNSHIP									
West Deptford 1: Elevation of private trailers and improvements to berm around Willow Wood Trailer Park located off of Crown Point Road	+	0	+	+	+	0	0	4	Medium
West Deptford 2: Elevation and easements on West 1st Avenue between Mantua and West Deptford municipalities	+	0	+	+	+	0	0	4	Medium
WOODBURY CITY									
Woodbury 1: Engineering study to determine appropriate flood mitigation action for EOC/data storage (City Hall) located at 33 Delaware Street	+	0	0	+	+	+	0	4	Medium

Mitigation Action, Program, or Project	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Woodbury 2: Engineering study to determine appropriate flood mitigation action and envelope hardening of Colonial Park Senior Citizen Center located at 401 S. Evergreen Street	+	0	0	+	+	0	0	3	Low
Woodbury 3: Engineering study to determine appropriate flood mitigation action on the following streets: East Red Bank Avenue, S. Evergreen Avenue, S. Barbara Avenue, Packard Avenue between Logan and S. Columbia Street, Delaware Street, Drexel Street, Child Street, Gerard Street between Salem Avenue and Glover Street	+	0	0	+	+	+	0	4	Medium
Woodbury 4: Elevation of residences on Packard Avenue	+	0	0	+	+	0	+	4	Medium
WOODBURY HEIGHTS BOROUGH									
Woodbury Heights 1: Install under-drains in Summit Section of Woodbury Heights (Alliance Street between Fordham Road and Central Avenue; sections of Auburn Street and Fordham Road) connecting to the storm sewer; new drainage would drop the groundwater level below the sanitary sewer system to avoid infiltration	+	+	0	+	+	0	+	5	High
Woodbury Heights 2: System redundancy and hazard threat recognition of water/sewage facility/pipes	+	+	0	+	+	0	+	5	High
Woodbury Heights 3: System redundancy of water facility (town well) located on Helen Avenue (water tank is on Grand View Street)	+	+	0	+	+	0	+	5	High
Woodbury Heights 4: Back-up generator for EOC (municipality building)	+	+	0	+	+	0	+	5	High
WOOLWICH TOWNSHIP									
Woolwich 1: Engineering study to determine course of action for elevation and floodproofing or acquisition of home on Liccardello Drive	0	+	0	0	+	0	+	3	Low
Woolwich 2: Engineering study to determine course of action to improve floodwalls for High Hill Road and Moravian Road	+	0	0	+	+	0	0	3	Low
Woolwich 3: Critical facilities protection/ hazard threat recognition of Hazmat (Graso Food Products–the largest pepper packing plant in the country. Services all 50 states; tier one facility)	+	0	0	+	+	0	+	4	Medium

Note: Projects were ranked with a -,0,+ rating per STAPLEE category. "-" indicates a negative impact, "0" indicates negligible impact, and "+" indicates a positive impact.

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Appendix H
Approval Letters

Contents of this Appendix

In accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and the Interim Final Rule (IFR), Gloucester County, New Jersey, has developed this Multi-Jurisdictional Hazard Mitigation Plan to identify hazards that threaten the county and ways to reduce future damages associated with these hazards.

Following this page are the signed adoption resolutions of the county and all participating jurisdictions that have adopted this Plan, authorizing municipal government staff to carry out the actions detailed herein.

H.1 Gloucester County

H.2 Municipalities

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Appendix I
Approval Letters

Contents of this Appendix

In accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and the Interim Final Rule (IFR), Gloucester County, New Jersey, has developed this Multi-Jurisdictional Hazard Mitigation Plan to identify hazards that threaten the county and ways to reduce future damages associated with these hazards.

Following this page are the signed approval letters to all participating jurisdictions that have been approved within this Plan.

I.1 Gloucester County

I.2 Municipalities

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