



APPENDIX A ADOPTION RESOLUTION

This appendix includes the sample resolution of plan adoption that will be submitted by Cape May County and participating jurisdictions authorizing adoption of the 2016 Cape May County Hazard Mitigation Plan Update. Additionally, the appendix includes resolutions submitted by Cape May County and participating jurisdictions. The resolutions issued to support adoption of the plan by each jurisdiction will be included in this appendix as they are formally completed.



Resolution # _____

WHEREAS the **XXXXXX**, NJ, has experienced natural hazards that result in public safety hazards and damage to private and public property;

WHEREAS the hazard mitigation planning process set forth by the State of New Jersey and the Federal Emergency Management Agency offers the opportunity to consider natural hazards and risks, and to identify mitigation actions to reduce future risk;

WHEREAS the New Jersey Office of Emergency Management is providing federal mitigation funds to support development of the mitigation plan;

WHEREAS a *Hazard Mitigation Plan* has been developed by the Mitigation Planning Committee;

WHEREAS the *Cape May County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update* includes a prioritized list of mitigation actions including activities that, over time, will help minimize and reduce safety threats and damage to private and public property, and

WHEREAS the draft plan was provided to each participating jurisdiction and was posted on the County Office of Emergency Management’s website so as to introduce the planning concept and to solicit questions and comments; and to present the Plan and request comments, as required by law, and

NOW THEREFORE BE IT RESOLVED by the **XXXX** of the **XXXX**:

1. The *Cape May County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update*, as submitted to the New Jersey Office of Emergency Management and the Federal Emergency Management Agency on **XXXX** by the Cape May County Office of Emergency Management is hereby adopted as an official plan of the **XXXXX**; minor revisions recommended by the Federal Emergency Management Agency and/or the New Jersey Office of Emergency Management may be incorporated without further action.
2. The **XXXXXX** departments identified in the Plan are hereby directed to pursue implementation of the recommended high priority activities that are assigned to their departments.
3. Any action proposed by the Plan shall be subject to and contingent upon budget approval, if required, which shall be at the discretion of the **XXXX**, and this resolution shall not be interpreted so as to mandate any such appropriations.
4. The Emergency Management Coordinator is designated to coordinate with other offices and shall periodically report on the activities, accomplishments, and progress, and shall prepare an annual progress report to be submitted to the Cape May County Office of Emergency Management. The status reports shall be submitted on a yearly basis by a predetermined date as agreed upon by all stakeholders.

PASSED by the **XXXX** of the **XXXXXX**, this _____ day of _____, 2016.



APPENDIX B MEETING DOCUMENTATION

This appendix includes meeting agendas, sign-in sheets, and presentation materials (where applicable and as available) for meetings convened during the development of the Cape May County Hazard Mitigation Plan Update.

CAPE MAY COUNTY HAZARD MITIGATION PLAN - 2016 UPDATE
Pre-Project Kick-Off Meeting – Agenda
August 12, 2015



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- Introductions
 - Project Schedule – See Handout
 - Municipal Participation –
 - Invitation to Participate, Letters of Intent to Participate
 - How do we assure broad, active and timely participation of communities?
 - Recommend – Municipal Supervisor/Administrator/Manager be identified as one POC
 - Recommend – Clearly defined dates for municipal deliverables (e.g. worksheets) with no exception.
 - Steering Committee Make-up – See Handout
 - Information and Data Collection
 - GIS Point of Contact for Critical Facilities - Brian O'Connor?
 - Web Site Point of Contact or Tetra Tech create a Web Site?
 - Point of Contact for reviewing Public Information (PIO) (brochure/surveys/announcements)
 - Meeting Logistics
 - Municipal Kick-Off – September
 - Date and Location
 - Invitation Template
 - Municipal Data Collection Meetings/Workshops – (two days with AM/PM sessions in October)
 - FEMA/NJOEM Mitigation Strategy Workshop - November
 - Municipal Annex Completion Meetings/Workshops – November - December
 - Public and Stakeholder Outreach
 - Develop list of County stakeholders (flood advisory commission, academia, commerce, hospitals, transportation, school districts, fire districts, police, utilities, etc.).
 - Stakeholder surveys
 - County website
 - Press releases from County in newspapers and social media
 - Project Management
 - Quarterly Reports to NJOEM
 - Invoicing



CAPE MAY COUNTY



EMERGENCY MANAGEMENT COMMUNICATIONS CENTER
30 WEST MECHANIC STREET, CAPE MAY COURT HOUSE, NJ 08210
{O} 609.463.6570 {F} 609.463.0252 {Email} mpagliughi@co.cape-may.nj.us

Gerald M. Thornton, Freeholder Martin L. Pagliughi, Director Scott G. Morgan, Deputy

TetraTech
Hazard Mitigation Plan
Kick off Meeting
Wednesday, August 12, 2015 @ 2 pm

ATTENDANCE ROSTER

#	NAME	AGENCY	SIGNATURE
1	Marty Pagliughi	CMC EMCC Director	
2	Scott Morgan	CMC EMCC Deputy Director	
3	Dale Foster	CMC Engineer	
4	PAUL MILLER	TETRA TECH	
5	JON KASEK	TETRA TECH	
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7	Van Cunningham	WJSP-OEM	
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CAPE MAY COUNTY HAZARD MITIGATION PLAN - 2016 UPDATE
Steering Committee Meeting – Agenda
September 10, 2015



- Introductions
- Updating the Mitigation Plan – Why?
- The Role of the Steering Committee: to guide the Planning Committee through the process that will result in a plan update that can be embraced both politically and by the constituency within the planning area. The Steering Committee will provide guidance and leadership, oversee the planning process, and act as the point of contact for all partners and the various interest groups in the planning area. The makeup of this committee was selected to provide the best possible cross section of views to enhance the planning effort and to help build support for hazard mitigation.
- Schedule
 - Overview
 - Monthly Steering Committee Meetings/Calls – Recurrent date to be determined
 - Municipal Kick-Off Meeting - Wednesday, September 17th
 - Municipal Data Collection Meetings (2 or 3 days at County OEM, dates to be determined)
 - FEMA/NJOEM Mitigation Strategy Workshop - January 2016
 - Public Review/Submit to NJOEM (February 2016)
 - CRS Communities – How best to accommodate?
 - Create a CRS Sub-Committee to the SC, primarily community CRS Coordinators
 - Sub-Committee meetings to be coordinated with regular SC meetings, via teleconference, or otherwise
 - CRS Communities will be provided additional guidance and direction so that they can maximize their “Activity 510 – Mitigation Planning” credit according to their interest
- Steering Committee Action Items



- Determine County Seal to be used –color or gold
- Letters of Intent to Participate – Already distributed by County OEM
- Data Wish List, Critical Facility Inventory, Plan Review – see handout
- Goals and Objectives Review – see handout
- Hazards of Concern Review – see handout
- Public and Stakeholder Outreach
 - Public Website: <http://www.capemaycountyhmp.com/Pages/default.aspx> add link to County OEM site and ask Municipalities to have link as well
 - Public Preparedness and Mitigation Survey (online) – see handout



CAPE MAY COUNTY HAZARD MITIGATION PLAN - 2016 UPDATE
Steering Committee Meeting – Agenda
September 10, 2015



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- Targeted Stakeholder Surveys (online) – see handouts
 - Social Media Releases – determine POC for social media actions
 - Trifold Brochure – see handout
 - County Mitigation Action Plan Review – worksheet – responsible department?
 - In-Kind Services Tracking – responsible department?
-

Cape May County Multi - Jurisdictional Hazard Mitigation Plan Update Meeting Minutes

Purpose of Meeting:	Steering Committee Meeting #1
Location of Meeting:	Cape May County EOC
Date of Meeting:	September 10, 2015

Attendees:

See attached sign-in sheet

Agenda Summary: This meeting was held to provide the Steering Committee information about the below topics and to make collaborative decisions.

Item No.	Description	Action By:
1	Introduction - All members introduced themselves and contact information exchanged.	All SC members
2	Updating the Mitigation Plan – Why? Tetra Tech presented the importance of a mitigation plan update to educate the Steering Committee members about the planning project.	Tetra Tech
3	Role of the Steering Committee - Discussion and review was had about what is expected of Steering Committee members and their responsibilities.	Tetra Tech and all SC members
4	Project Status - The current status of the project was reviewed. It was stressed that this project is on an accelerated timeframe and data collection (spatial and plans) need to be gathered.	Tetra Tech and all SC members
5	Schedule - A discussion regarding project meetings and milestones were discussed. Municipal Kick-Off Meeting – September 17, 2015; Annex Workshops; FEMA/NJOEM Mitigation Strategy Meeting; Public Review/Submit to NJOEM for preliminary review – February 2016	Tetra Tech to present schedule to Planning Committee at the Municipal Kick-Off on September 17, 2015
6	Citizen Survey and Brochure - The draft brochure and citizen survey were distributed, discussed and reviewed by the Steering Committee. An email address where questions or comments can be sent about the HMP Update was discussed. The below survey was developed for any citizen to as a question or provide comment on the plan update. Same was put on the brochure https://www.surveymonkey.com/r/capemaycountyhmpquestions	Tetra Tech will update the brochure and distribute to SC and at the Municipal Kick-Off on September 17, 2015
7	Hazards of Concern – The hazards of concern from the 2010 HMP were reviewed and discussed for update. The hazards of concern were regrouped to align with the State HMP. Sea level rise was added as a stand alone hazard. Derecho is to be included in Severe Weather	Tetra Tech to present updated hazards of concern at the Municipal Kick-Off on September 17, 2015

Cape May County Multi - Jurisdictional
Hazard Mitigation Plan Update
Meeting Minutes

	Hazard	
8	Goals and Objectives – The 2010 HMP goals and objectives were reviewed and discussed for update. Goals remain the same. Objectives will be revised and sent back to SC.	Tetra Tech to revise objectives discussed and distribute to the Steering Committee for follow-up and finalization.
9	In-kind Services Tracking – All SC members were advised to maintain record of all time spent on this project to satisfy the County portion of the grant.	All SC members to track time
10	Community Rating System Municipalities – CRS communities were reviewed. Creation of a CRS sub committee to the Steering Community was discussed. CRS community points of contact must be established early on to allow for additional guidance and direction so those communities can maximize their “Activity 510” credit points.	Tetra Tech will provide SC guidelines to assist CRS communities
11	Website and Stakeholder and Citizen Survey – Current website was displayed (www.capemaycountyhmp.com) Citizen survey and stakeholder surveys were reviewed.	SC members will review and provide any comment by September 17, 2015

CAPE MAY COUNTY



EMERGENCY MANAGEMENT COMMUNICATIONS CENTER
 30 WEST MECHANIC STREET, CAPE MAY COURT HOUSE, NJ 08210
 (O) 609.463.6570 (F) 609.463.0252 (Email) mpagliughi@co.cape-may.nj.us

Gerald M. Thornton, Freeholder Martin L. Pagliughi, Director Scott G. Morgan, Deputy

Tetra Tech
All Hazard Mitigation Grant Project
Steering Committee Meeting
Thursday, September 10, 2015 @ 1:30 pm

ATTENDANCE ROSTER

#	NAME	AGENCY	SIGNATURE
1	Marty Pagliughi	CMC EMCC Director	<i>[Signature]</i>
2	Scott Morgan	CMC EMCC Deputy Director	
3	Dale Foster	CMC Engineer	
4	Jerry Thornton	Freeholder Director	
5	Will Morey	Freeholder	
6	Brian O'Connor	CMC Planner	<i>[Signature]</i>
7	Dan Dunning	NJSP Detective II ERB South Region	
8	Harry DeButts	Avalon OEM	<i>CONF. LINE</i>
9	Paul Miller	Tetra Tech	<i>[Signature]</i>
10	Jonathon Raser	Tetra Tech	
11	Frank Donato	Ocean City	<i>[Signature]</i>
12	Jim Eberwine	Absecon OEM	<i>[Signature]</i>
13	Paul Deitrich	Upper Township	<i>[Signature]</i>
14	George Savastano	Sea Isle City	
15	JENNA GATTO	JC NERB	<i>[Signature]</i>
16	Chris Heck	JC NERB	<i>[Signature]</i>
17	TIM DEWANE	A.	
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CAPE MAY COUNTY ALL HAZARD MITIGATION PLAN UPDATE

SIGN-IN SHEET

TOPIC: STEERING COMMITTEE #1

MEETING DATE: 09-10-15



Name	Title	Agency/Municipality	Phone Number	E-mail
Brian O'Connor	GIS Specialist Engineer	Cape May County	609-465-1883	CO, CAPE-MAY brian.oconnor@cms.us
Paul Dietrich	GIS LEAD	UPPER MER	609-628-2004 ext 244	engineer@uppermer.nj.gov
George Savastano	Business Administrator	Sea Isle City	609-457-8893	gsavastano@seaislecity.nj.us
JENNA GATTO	COMMUNITY RESILIENCE SPECIALIST	JC MER	609.812.0649 x213	GGATTO@MARINE.PUTTERS.EDU
Chris Huch	Community Resiliency Specialist	JC NETRR	609-812-0649 x216	huch@marine.putgers.edu
Scott MORGAN	CMLDEM DEPUTY	CMLC	609-413-6570	SMORGAN@CO.CAPE-MAY.NJ.US
Frank Donato	Ocean City DEM	City of Ocean City	609-525-9350	fdonato@ocnj.us
Jim Eberwine	Assistant	League of Assesors	609-839-6992	jim.eberwine@leaguenj.net

Cape May County Hazard Mitigation Plan Update Meeting Minutes

Purpose of Meeting:	Planning Committee/Partners Meeting
Location of Meeting:	Cape May County EOC
Date of Meeting:	September 17, 2015

Attendees:

See attached sign-in sheets

Agenda Summary: Cape May County OEM hosted the initial kick off meeting for the Hazard Mitigation Plan Update. Each municipality was represented with the exception of Woodbine, allowing the planning partners to begin the update of the County Hazard Mitigation Plan. The agenda included a slide show presentation addressing mitigation planning, reasons for updating the plan to include FEMA regulations, organization of the planning groups, roles of the municipalities and “homework” or action items to include critical date. It was stressed that a municipal team approach to completing the homework is recommended and required. It was also stressed to the participants that we are on a fast track to complete this update as the plan expires in January of 2016.

Item No.	Description	Action By:
1	Letters of intent to participate – All municipalities were advised that the County will be sending out official notification about the municipalities commitment to participate. Same must be returned.	All municipalities wishing to participate
2	Completion of Homework Worksheets: All municipalities were instructed on completion of Worksheets 1 thru 6 by October 22.	All municipalities wishing to participate
3	Additional Assistance with Worksheets – All municipalities were informed that Tetra Tech is available to assist them with worksheets. The strategy of a webinar and individual workshops was discussed. Municipalities were advised that they will be notified of a Worksheet webinar in the coming weeks.	All municipalities wishing to participate
4	Time Line – All municipalities were advised of timeline and critical dates ranging from October thru April 2016.	All municipalities
5	In Kind Tracking – The In-Kind tracking tool was provided to all municipalities and the importance of keeping accurate records was stressed.	All municipalities



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Cape May County Hazard Mitigation Plan - 2016 Update

Municipal Kick-Off Meeting

September 17, 2015



Today's Topics

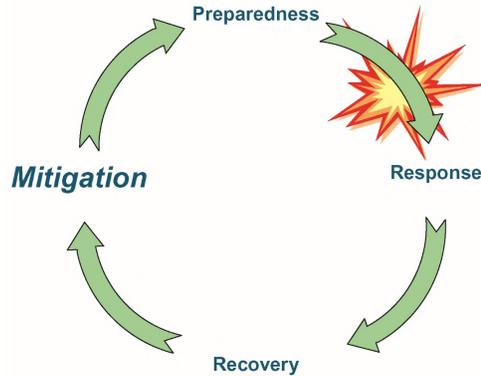
- Introductions
- Purpose for a Hazard Mitigation Plan
- Updating a Hazard Mitigation Plan
- Schedule
- Participation Expectations
- Planning Process
- Action Items



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Hazard Mitigation

“Mitigation” -
Sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event



“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).

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Cape May County and DMA 2000

The mitigation plan update will:

- Help the County prepare for and mitigate the effects of disasters.
- Build more resilient communities.
- Continue to allow the county and participating partners to be eligible for pre- and post-disaster recovery and mitigation funding.
 - Pre-Disaster Mitigation Grant Funding (404 Mitigation)
 - Post-Disaster Mitigation for Damaged Structures/Infrastructure (406 Mitigation)
- Support National Flood Insurance Program (NFIP) compliance
- Earn additional Community Rating System (CRS) credit for participating communities

A **Local Mitigation Plan** demonstrates the jurisdiction's commitment to reducing risk and serves as a guide for decision makers as they commit resources to minimize the effects of natural hazards.

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Requirements for Local Mitigation Plan Updates

- Updated Risk Assessment - a factual basis for activities proposed in the Mitigation Strategy section include:
 - Overview of hazards (type, location, probability)
 - Vulnerability analysis (impact on buildings, infrastructure, economy, development trends)
 - Multiple jurisdictions (specific to each city/town/village)
- Updated Mitigation Strategy – a blueprint for reducing losses identified in the risk assessment
- Include the opportunity for public comment and for relevant agency and stakeholder involvement
- Plan Maintenance and Adoption Processes

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Plan Document

- Volume 1 will contain all information that applies to the whole planning area (county) such as description of the planning process, risk assessment, goals and objectives, County/multi-jurisdictional mitigation strategies and a plan maintenance program.
- Volume 2 will contain those elements that are “jurisdiction specific”. Your community’s chapter. These annexes will meet DMA requirements for each jurisdiction.

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Plan Update Process Steps

- Organize Resources
- Re-Assess the Risk
- Review and Update the Mitigation Plan
- Develop Procedures for Plan Implementation, Monitoring and Update
- NJOEM/ FEMA Approval
- Adopt the Plan

Engage a Wide Range of "Stakeholders"

- Federal, State, Regional and Local Agencies
- Business and Civic Groups
- Academic Institutions
- Other "local governments"
- The Public



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Organization of the Planning Group

- County Management Team (Emergency Management and Public Works/Engineering)
- Contract Consultant (Tetra Tech)
- Steering Committee (SC)
- Municipal Planning Partnership
- Community Rating System Sub-Committee of the SC
- Stakeholders (e.g. academic, police, fire, health care, business/industry, utilities)
- General Public

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Municipal Participation

- Attend planning partnership meetings/workshops
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- Provide outreach and encourage involvement of property owners in floodplains
- Assist with the development of your jurisdictional annex
- Review and provide feedback on Draft and Final Plan documents
- Facilitate the adoption process – Governing Body must pass an Adoption Resolution once the plan is approved by FEMA
- Implement and maintain the Plan

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Assemble Your Municipal Mitigation Team

*Here is who we suggest you include as part of your
Hazard Mitigation Planning team:*

- Floodplain Administrator
- Building Code Official
- Municipal Engineer
- Land Use Planner
- Municipal Clerk
- Municipal Mayor/Administrator
- Municipal CFO/Fiscal Rep
- Public Works Director
- Police Official
- Fire Official

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Municipal Participation Support

Municipal Involvement will be encouraged and promoted by:

- Three formal municipal planning partnership meetings (Kick-Off Meeting (today), FEMA Mitigation Strategy Workshop, Annex Completion Workshop)
- Data collection and annex tools, templates, surveys
- Local Data Collection Workshops (October, dates to be announced)
- Completion of Municipal Annex supports “buy in” and “ownership”
- Planning process execution and municipal training programs designed to build local capability
- Local public outreach including RL/SRL flood structure outreach

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Re-Assess the Risk



These are the Five Steps to Assess Risk:

1. Identify Hazards
2. Profile Hazards
3. Inventory Assets
4. Estimate Losses
5. Evaluate Mitigation Options

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Assess the Risk – Hazard of Concern Identification

Hazards of Concern (HOCs)- Those natural hazards that pose significant risk to the Planning Area – and we can address through mitigation rather than only through preparedness, response and recovery.

- Review and update the “hazards of concern” that we will carry through the planning process.
- Our effort should be proportional to the risk the hazards pose.
- Each municipality has differing risk to the HOCs.
- We are generally limiting this plan to natural hazards.



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Assess the Risk – Hazard of Concern Identification

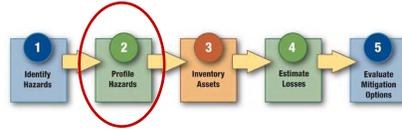
State HMP Hazards of Concern	Cape May County HMP Hazards of Concern	
	2014 Plan	2010 Plan Hazards
Coastal Erosion	Coastal Erosion	Coastal Erosion
Hurricanes and Tropical Storms	Coastal Storms	Hurricanes and Tropical Storms
Flood	Flood (flash and coastal)	Flood (flash and coastal)
Severe Weather (high winds, tornado, thunderstorms, hail, extreme temperature)	Severe Storm (windstorms, thunderstorms, hail, tornadoes)	Severe Weather (hail, high winds, tornado, lightning, derecho, extreme temperature)
Winter Storms	Severe Winter Storm (heavy snow, blizzards, ice storms, extreme cold temperatures)	Severe Winter Weather (snow, blizzards, ice storm)
Tsunami is included in Flood Hazard of SHMP	Tsunami	Tsunami
Wildfire	Wildfire	Wildfire
Nor'Easter	N/A	Nor'Easter (new)
Sea Level Rise Included in Coastal Erosion Hazard	N/A	Sea Level Rise Will be a Stand Alone Hazard



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Assess the Risk – Hazard Profiling (Worksheet #1 on your CD)

- Hazards are profiled (characterized) according to:
 - Background and local conditions
 - Historic frequency and probability of occurrence
 - Severity
 - Historic losses and impacts
 - Designated hazard areas
- What hazard events have occurred since the 2010 Plan?
- What County and local losses have occurred as a result of these events?



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Worksheet #1 on CD Events and Losses

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet # 1 - Events and Losses

Please send completed Word electronic versions of these worksheets to:
Jonathan Raser and Paul Miller at
jonathan.raser@tetrattech.com and paul.miller@tetrattech.com
by October 22, 2015
(973) 630-8042; (973) 630-8344

Municipality: _____

Name & Title of Individual Completing Worksheet: _____

Who can provide information about events and losses: OEM Coordinator, Police, Fire, DPW, and municipal Engineer. Refer to FEMA Project Worksheets (PWs), DPW records, police response records, etc.

In the table below, please identify events in which your community suffered significant damages/losses and describe these losses (e.g., flooded roads, road closures, DPW/Police overtime, debris management, opened shelter for two days, etc.). Please add other non-declared events that affected your community that are not listed.

Then, please fill out an 'Event and Loss Summary Sheet' for the November 2009 Nor'Easter, February 2010 Blizzard, Hurricane Irene, and Hurricane Sandy. Feel free to add additional sheets for other major events in your community.

Dates of Event	Event Type	FEMA Declaration	Cape May County Designated?	Did your community suffer losses/costs from this event? (Yes/No - If "yes" please, complete an Event Loss Summary Sheet for this event.)
EXAMPLE				Main Street was closed due to flooding for 3 days; DPW and Police overtime for 3 days for detour traffic, collect debris, assist and restore Shelter at High School open for 1 day
February 10, 2008	High Winds	No	N/A	
March 5, 2008	Thunderstorms and Strong Winds	No	N/A	

If your community suffered significant damages/losses from this event, indicate "Yes" and complete an Event Loss Summary Sheet.

We are expecting Event Loss Summary Sheets for the following events:

- Nor'Easter – November 2009 (DR-1867)
- Blizzard / Winter Storm – February 2010 (DR-1899)
- Hurricane Irene – August 2011 (DR-4021)
- Hurricane Sandy (DR-4086)

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Worksheet #1 on CD Events and Losses (Continued)

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet # 1 - Events and Losses

Event and Loss Summary Sheet
Hurricane Irene – August 2011

Event Date and Description (incl. DR# if applicable): **Hurricane Irene DR4021**

Life Safety (evacuation, sheltering, injuries, deaths):

Loss of Service (e.g. road closures, utility outages, commercial closures – include location, time of closure and/or number of affected):

Infrastructure Damage (e.g. roads, bridges, culverts, treatment facilities, lift stations, etc.):

Facility/Structural Damage – Public (e.g. police, school, etc.):

Facility/Structural Damage – Private (e.g. residential, commercial property, etc.):

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Assess the Risk – Inventory Assets

What is at risk? People, Property, Economy, Environment

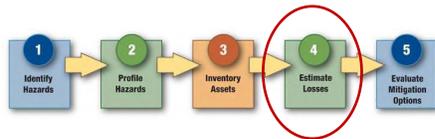
- Population and Demographics – Has this changed since 2010?
- Building Stock (Residential, Commercial, Industrial, Educational, etc.) – Has this changed since 2010?
- Facilities (critical and essential facilities, utilities, transportation features, high-potential loss facilities and user-defined facilities)
 - Police, Fire, Emergency Services
 - Hospitals and Medical Care Facilities
 - Schools and Care Facilities
 - Sheltering Facilities
 - Infrastructure (Transportation Systems, Utilities)



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Assess the Risk – Estimate Losses

- Vulnerability Assessment - What do we predict our suffering to be if we do nothing to mitigate our risk:
 - Given current conditions, which have changed since 2010?
 - Given our improved understanding of risk, and tools to assess that risk, which have changed since 2010?
 - Sea Level Rise will be fully considered in this update process



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Assess the Risk – Evaluate Mitigation Options

Re-evaluate Hazard Mitigation Goals and Objectives

Goals: General guidelines that state what we want to achieve. Should be consistent with the State goals and other local goals.

Example: “Protect property”

Objectives: Define strategies or implementation steps to attain a stated goal.

Example: “Enact or enforce regulatory measures that ensure new development will not increase flood threats to existing properties”.



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Assess the Risk – Evaluate Mitigation Options

Evaluate Capabilities

What resources do we have at our disposal to Mitigate Risk?

“Proposed mitigation actions will be evaluated against the backdrop of what is feasible in terms of your government’s legal, administrative, fiscal and technical capacities”
(FEMA 386-3)

- Serve to identify legal authority and administrative, technical and fiscal capabilities in the state, county and jurisdictions that will facilitate or hinder hazard mitigation goals and objectives.
- State Capability Assessment is in the State HMP
- Part of this Planning Process is to build County and Local Mitigation Capabilities
- Training, Workshops and Seminars

Capability Assessments (Worksheet #2 on CD)

Please work with your planning team and bring updated versions of worksheets to your local data collection meeting the week of October 19th.

- Building Code Official
- Municipal Engineer
- Land Use Planner
- Municipal Clerk
- Floodplain Administrator
- CFO/Fiscal Representative

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet#2 - Municipal Capability Assessment

Please send completed Word electronic-versions of these worksheets to:
Jonathan Raser and Paul Miller at
Jonathan.raser@tetratech.com and Paul.miller@tetratech.com
by October 22, 2015
973-630-8042, 973-630-8344

Municipality: _____

Name & Title of Individual Completing Survey: _____

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation. In addition, indicate the code chapter, and name of plan including any explanation of authority in the right-most column.

Who can assist with completing this table: Municipal Planner, Clerk, Code Official. Refer to your municipal codes and ordinances, Master Plan.

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Chapter and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan				
Capital Improvements Plan				
Floodplain Management Basin Plan				
Sewerwater Management Plan				
Open Space Plan				
Stream Corridor Management Plan				
Watershed Management or Protection Plan				
Economic Development Plan				

NFIP Compliance

We need the NFIP Floodplain Administrator Involved!

- We need to know specific information about the NFIP program in your community.
- Your NFIP Floodplain Administrator (FPA) **MUST** be actively involved in the update process.
- NFIP Administrator to work with Tetra Tech to complete **Worksheet #3** (best done in a short interview – live or phone)

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #3 – NFIP Floodplain Administrator

Please send completed Word electronic-versions of these worksheets to:
Jonathan Raser and Paul Miller at
Jonathan.raser@tetratech.com and Paul.miller@tetratech.com
by October 22, 2015
973-630-8042, 973-630-8344

Municipality: _____

NFIP Floodplain Administrator Name/Title: _____

Flood Vulnerability Summary

1. Does the municipality maintain lists/inventories of properties that have been flood damaged? If so, does this inventory identify property owners who are interested mitigation (e.g. elevation, acquisition)?
2. Characterize/quantify the number of structures damaged during Sandy or other events. If possible, can you provide a table of these structures indicating the number of residential/commercial/industrial?
3. Do you make Substantial Damage estimates, and how many were declared for Sandy or other events?
4. How many are interested in mitigation (elevation or acquisition), and how many are currently in the process of mitigation?
5. What is the funding source(s) for those being mitigated (e.g. property owner, flood insurance and ICC, grant funding)?

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Update, Identification and Analysis of Mitigation Actions

- Mitigation strategies need to be realistic, achievable and action-oriented.
- Will include both regional (county-wide) strategies, as well as jurisdiction-specific.
- For each proposed mitigation strategy, the following will be identified:
 - Implementation timeline
 - Estimated budget
 - Potential funding sources
 - Lead agency or department
 - Supporting agencies
 - Priority
 - For prior/old strategies provide update of status
- Proposed mitigation activities are evaluated using a Cost-Benefit Screening



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Update Progress on 2010 Actions

- Identify progress made on mitigation actions identified in 2010 plan.
- If an action wasn't completed, why not?
- This strategy review process is NOT meant to blame or punish. The answer can reveal things that need to be addressed to allow mitigation to progress, for example:
 - Obstacle: We do not have the technical resources to prepare a grant application.
 - Possible Action: Develop a county-level support team trained in application development.

Update Progress on 2010 Actions (Worksheet #4 on CD)

Please work with your planning team to update this worksheet.



CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #4 - Mitigation Action Review Worksheet for Cape May County



Please complete responses below and send electronic Word version by September 30, 2015 to:
Jonathan Raser or Paul Miller
Phone: 973-630-8044; 8344 E-mail: jonathan.raser@tetratech.com or paul.miller@tetratech.com

Municipality: _____

Name & Title of Individual Completing Worksheet: _____

Who can provide you information about past mitigation actions: See the 'Responsible Party' column in the table below which identifies who put this action in the 2010 HMP (e.g., DPW, Engineer, Code Official, Planner, OEM Coordinator).

Please use the following table to **indicate progress and next steps** on your community's mitigation strategy identified in the 2010 HMP. Please be as detailed as possible.

2010 Mitigation Action	Responsible Agency	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2015 HMP or Discontinue)	Describe Next Step 1. If including action in the 2015 HMP, revise forward to be more specific (as appropriate). 2. If discontinue, explain why.
Example: Elevate Main Street Bridge	DPW	No Progress	1. 0% complete 2. Budget and personnel constraints have restricted this action from moving forward 3. No funding secured	Include in 2015 HMP	1. Elevate Main Street Bridge above the base flood elevation. 2. (If you chose 'Discontinue,' here is an example: The Town does not have the authority to retrofit this bridge; it is owned by the State.
CMC-1a: Where appropriate, Municipality	Municipality	Choose an item	1	Choose an	1

New Mitigation Actions for 2016 HMP Update

- Opportunity to add new mitigation actions
- This includes all in-progress grant applications (FEMA or other related grant programs)
- Proposed mitigation actions should address identified vulnerabilities
- State and FEMA Mitigation Workshop
– November 2015



"At the first sign of a flood, you just push this little button."

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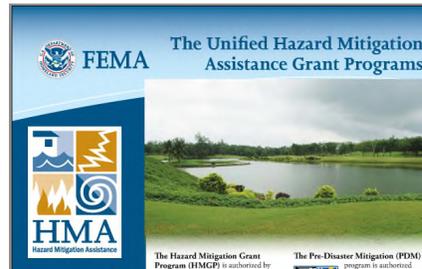
Types of Mitigation Actions

- **Plans and/or Regulations.** Measures such as zoning and building code, ordinances, planning (comprehensive/master plans, stormwater management plans, open space), hazard/risk insurance (e.g. NFIP).
- **Property Protection.** Measures such as acquisition, elevation, relocation, structural retrofits, storm shutters, rebuilding, barriers, floodproofing.
- **Public Education and Outreach.** Measures such as public awareness projects, real estate disclosure, hazard information centers, technical assistance.
- **Natural Systems Protection.** Measures such as erosion and sediment control, stream corridor protection, vegetative management, wetlands preservation.

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Plan Implementation

- Your mitigation strategy section provides a “blueprint” to follow for progressively reducing your community’s natural hazard risk.
- It will includes two type of initiatives/projects – those that your community can “self fund”, and those that will require outside (e.g. grant) funding.
- Mitigation grant opportunities:
 - The annual HMA grant window opens in June of each year.
 - HMGP funding comes in the wake of Declared Disasters in the State.



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Integration with Other Plans and Programs

The Hazard Mitigation Plan should complement and support other Plans and Regulatory Mechanisms

- Emergency Operations Plan (EOP) / Comprehensive Emergency Management Plans (CEMP)
- Master Plans (regional and local) – these plans guide and direct land use and development
- Capital Improvement Plans (some of these projects are grant eligible)
- Higher Regulatory Standards (e.g. increased free-board, cumulative substantial damages)
- Stormwater Management Plans

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Plan Integration (Worksheet #5 on your CD)

- For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. We need to gather an understanding of your community's progress in plan integration, as well identify potential integration opportunities that you may pursue in the future.
- Circulate to your "team" to complete. Please expand on your answers when appropriate!

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #5 - Plan Integration

Please send completed Word electronic versions of these worksheets to:
Jonathan Raser and Paul Miller at
Jonathan.raser@tetratech.com and Paul.miller@tetratech.com
by October 22, 2015
973-630-8042; 973-630-8344

Municipality: _____

Name & Title of Individual Completing Worksheet: _____

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. We would like to gather an understanding of your community's progress in plan integration, as well identify potential integration opportunities that your community may pursue in the future.

Who can assist with completing this table: The HMP main point of contact should discuss with the Engineer, Clerk, Mayor/Administrator, Planner, CFO, Building Code Official, NFIP Floodplain Administrator

Applicable Department/Agency	Plan, Program, Mechanism, etc.
Planning	
Planner (staff or contract), Planning Board, Zoning Board of Adjustments (ZBA)	Does your municipality have a Master/Comprehensive Plan (land-use plan), or are you currently working on an update of your Master/Comprehensive Plan? If so, does it include, or are you considering, areas of natural hazard risk (e.g. flood-prone areas, steep slopes)? Does your Master/Comprehensive plan refer to a local or Countywide Hazard Mitigation Plan?

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New Development (Worksheet #6 on your CD)

- Please indicate any major new development since 2010 AND any known or anticipated major new residential/commercial development and major infrastructure development that are identified for the next five (5) years in your municipality.

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #6 - New Development

Please send completed Word electronic versions of these worksheets to:
Jonathan Raser and Paul Miller at
Jonathan.raser@tetratech.com and Paul.miller@tetratech.com
by October 22, 2015
973-630-8042; 973-630-8344

Municipality: _____

Name & Title of Individual Completing Worksheet: _____

Please indicate recent major development and known or anticipated major residential commercial development and major infrastructure development that are identified for the next five (5) years in your municipality.

Property or Development Name	Type (e.g. Res., Comm.)	# of Units/ Structures	Address and Block/Lot	Known Hazard Zone(s)	Description (Status of Development)
Recent Development from 2010 to Present					
Known or Anticipated Development in the Next Five (5) Years					

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Schedule

- Municipal Kick-Off Meeting: September 17, 2015
- Municipal Data Collection
Local Support Meetings: October, 2015
- FEMA Mitigation Workshop: November 2015
- Draft Plan to NJOEM: January 2016
- Municipal Annex Completion Workshop: January 2016
- Final Plan to State and FEMA Region II: April 14, 2016
- County and Municipal Plan Adoption: Summer 2016

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Worksheets #1 – #6

Please work with your planning team and bring updated versions of worksheets to your local data collection meeting in October (dates to be announced).

All electronic templates are on your CD in the 'Worksheets' folder.

#	Worksheet Name	Who is Responsible to Complete and Submit this Worksheet?	Here are suggestions as to where to find the requested info?
1	Events/Losses	OEM, Police, Fire, DFW, Engineer	FEMA Project Worksheets (PWs) DPW records, Police response records
2	Capability Assessment	Code Official, Planner, CFO/Fiscal Rep, Clerk	Code Book, e-Code, Municipal ordinances, Master Plan
3	NFIP Floodplain Administrator	Floodplain Administrator	NFIP Records

HMP Main POC – see

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Community Rating System Participants

CRS Community	Local CRS Coordinator	Current CRS Class
Avalon	Sal DeSimone	Class 5
Cape May	Edie Kopsitz	Class 6
Cape May Point	Sal DeSimone/Anita Van Heeswyk	Class 6
North Wildwood	Ralph Petrella	Class 7
Ocean City	Arthur Chew	Class 6
Sea Isle City	Neil Byrne	Class 5
Stone Harbor	Jill Gougher	Class 5
Upper Township	Paul Dietrich	Class 6
Wildwood	In application process	---
West Wildwood	Pending	Class 10
Wildwood Crest	Patrick Malia	Class 6

- We will establish a CRS Sub-Committee of the Steering Committee to address the Floodplain Management Planning (Activity 510) elements.
- The CRS Sub-Committee will meet regularly (in-person and via teleconference) to fulfill the Activity 510 planning elements.
- CRS communities will be provided guidance and resources so that each can determine how much Activity 510 credit they will earn.

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Thank you!
 Jonathan Raser, CFM
jonathan.raser@tetrattech.com
 Paul Miller, CFM
Paul.miller@tetrattech.com



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CAPE MAY COUNTY ALL HAZARD MITIGATION PLAN UPDATE
SIGN-IN SHEET
TOPIC: MUNICIPAL KICK OFF MEETING
MEETING DATE: 09-17-2015



Name	Title	Agency/Municipality	Phone Number	E-mail
Daniel Dunn	OEM Coordinator	City of Wildwood	(609) 780-7364	d.dunne@wildwoodnj.org
Steve Bony	Planning Administrator CRS Coordinator	City of Wildwood	(609) 374-1668	Shony@wildwoodnj.org
JACK GIBSON	ENGINEER	DEANIS TWP	609 602 2035	blackjack@comcast.net
Ed Belski	EM Deputy Coord	West Cape May	609-315-2145	ed.belski@gmail.com
Grant Russ	FW Director	STONE HARBOR	609-368-7811	Russg@SHHS.org
Jill Gougher	CRS Coordinator	Stone Harbor	609-368-6800	gougherj@shnj.org
Irene Schreiner	OEM Coord.	Cape May Point	609-884-7474	Schreiner@Comcast.net
MIKE KOCHNER	CONSTRUCTION	STONE HARBOR	368 6814	KOOCHEM@SUNJ.ORG
Joe Reed	PLW Supt	Cape May CTS	609 884 9570	JoeP@capemajcity.com
Sean B. Murphy	OEM Coord.	MIDDLE TWP	609-324-2008	SMURPHY@MIDDLETOWNSHIP.COM
Gary Douglas	OEM Coord.	Lower Twp	609-780-6049	gdouglas@townshipoflower.com
SCOTT MORGAN	Deputy Dir. CAMCOEN	CAPE MAY	609 483 6570	SCOTT.MORGAN@CAPE-MAY.NJ.US
ED MAHANEY	MAYOR	CITY OF CAPE MAY	609-425-1774	emahaney@capemajcity.com
Eileen Keis	Dep OEM	Lower Twp	609-846-6861	EKeis@TownshipofLower.org





CAPE MAY COUNTY ALL HAZARD MITIGATION PLAN UPDATE
SIGN-IN SHEET
TOPIC: MUNICIPAL KICK OFF MEETING
MEETING DATE: 09-17-2015



Name	Title	Agency/Municipality	Phone Number	E-mail
Harvey de Batts	Audon OEM	OEM/PAUKA	609-231-7784	harveydeBatts@yahoo.com
Kathryn Wintz	CME Planning	County	609-465-1084	Kathryn.Wintz@capemay.nj.us
Chris Ridgion	SEBURY OEM	WEST WILWOOD	609-542-4845	Cridings@westwilwood.org
SAI Desnoye	CRS	Avalon, M. Auk, Crest	609-780-8010	
Paul Dietrich	Municipal Engineer	Upper	609-628-2111 ext 244	engineer@upper-township.nj.com
Roy Murtanen	OEM Coordinator	OEM	609-872-0151	Rmurtan@com
Jerry Calvan	DR. Publications	No. Wildwood	609-780-0614	sioangc@yahoo.com
JEN DOWE	TAX ALLEGORIST	LOWER	609-886-2005	ALLEGORIST@TOWNSHIP OF LOWER.ORG
Dale M Foster	CM County Eng	Cap. May	609-465-1035	countyengineer@capemay.nj.us
Dan Conving	NJOEM	NOJEM	609-480-5118	1pp6840@gw.nj.sp.org
Bruce MacLeod	CITY MGR	CITY of CAPE MAY	609-524-9536	BTyce@capemaycity.com
Ed Dean	Audon OEM	Audon	609-967-5920	edean@audonboro.org





**CAPE MAY COUNTY ALL HAZARD MITIGATION PLAN UPDATE
SIGN-IN SHEET
TOPIC: MUNICIPAL KICK OFF MEETING
MEETING DATE: 09-17-2015**



Name	Title	Agency/Municipality	Phone Number	E-mail
John Berg	DEM Coordinator	Township of Dennis	609-231-8129	GRANDPOT@GMAIL.COM
Ed Grutif	Wildlife Crest Admin	Wildwoods Coast/CMAA	609-278-8777	grutif@eg.yahoo.com
Pam Stange	Avalon	Avalon	967-5522	p.stange@avalonboro.org
Kevin Scarp	Avalon	Avalon	967-5915	LSCARP@Avalonboro.org
MIKE JARGOWSKI	SEA COAST FLOOD PLAN MANAGER	SEA COAST	609-425-4371	SICOLEM@SEASIDECON.ORG
NEIL BYRNE	P. SAFETY COUNCILMAN	SIC	609 602 9002	NDYRNE@SEASIDE.CITY.NJ.
AL CARUSI	Commissioner	SH	609-602-5263	CARUSIA@STONEHARBOR.NJ.US
BOB MULLOCK	Commissioner	Cape May Point	609-884-8468	Bob.Mullock@CapeMayNJ.org
Serg Stojan	Applications	Ocean City, NJ	609-399-6111	bitafoya@ocnj.nj.us





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Cape May County HMP Update Worksheet Webinar

Toll-free number: [800-523-8437](tel:800-523-8437)
Conference ID: [5362696632](https://www.zoom.us/j/5362696632)

October 15, 2015



Today's Topics

- Review Municipal Planning Team / Partners
- Review Worksheets 1-6
- Worksheets due October 22
- Schedule



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Planning Team Partners

#	Worksheet Name	Who is Responsible to Complete and Submit this Worksheet?	Here are suggestions as to where to find the requested info?
1	Events/Losses	OEM, Police, Fire, DPW, Engineer	FEMA Project Worksheets (PWs) DPW records, Police response records
2	Capability Assessment	Code Official, Planner, CFO/Fiscal Rep, Clerk	Code Book, e-Code, Municipal ordinances, Master Plan
3	NFIP Floodplain Administrator	Floodplain Administrator	NFIP Records
4	Mitigation Action Progress	HMP Main POC – see "Responsible Party" column in the table provided for guidance	LOIs, NJEM Grants, Capital Improvement records
5	Plan Integration Questionnaire	HMP Main POC	Discuss with Engineer, Clerk, Administrator, Planner, CFO, and Municipal Mayor/Administrator
6	New Development Table	Engineer, Planner, Building Department	Redevelopment Plans, Permits



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Worksheet #1 Events and Losses

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet # 1 - Events and Losses

Please send completed Word electronic versions of these worksheets to:
Jonathan Raser and Paul Miller at
jonathan.raser@tetratech.com and paul.miller@tetratech.com
by October 22, 2015
(973) 630-8042; (973) 630-8344

Municipality: _____

Name & Title of Individual Completing Worksheet: _____

Who can provide information about events and losses: OEM Coordinator, Police, Fire, DPW, and municipal Engineer. Refer to FEMA Project Worksheets (PWs), DPW records, police response records, etc.

In the table below, please identify events in which your community suffered significant damages/losses and describe these losses (e.g., flooded roads, road closures, DPW/Police overtime, debris management, opened shelter for two days, etc.). Please add other non-declared events that affected your community that are not listed.

Then, please fill out an 'Event and Loss Summary Sheet' for the November 2009 Nor'Easter, February 2010 Blizzard, Hurricane Irene, and Hurricane Sandy. Feel free to add additional sheets for other major events in your community.

Dates of Event	Event Type	FEMA Declaration	Cape May County Designated?	Did your community suffer losses/costs from this event? (Yes/No - If "yes" please, complete an Event Loss Summary Sheet* for this event.)
EXAMPLE				<i>Main Street was closed due to flooding for 3 days; DPW and Police overtime for 3 days for detour traffic; collect debris; assist and deliver Shelter at High School open for 1 day.</i>
February 10, 2008	High Winds	No	N/A	
March 5, 2008	Thunderstorms and Strong Winds	No	N/A	

If your community suffered significant damages/losses from this event, indicate "Yes" and complete an Event Loss Summary Sheet.

We are expecting Event Loss Summary Sheets for the following events:

- Nor'Easter – November 2009 (DR-1867)
- Blizzard / Winter Storm – February 2010 (DR-1899)
- Hurricane Irene – August 2011 (DR-4021)
- Hurricane Sandy (DR-4086)

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Worksheet #1

Events and Losses (Continued)

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet # 1 - Events and Losses

Event and Loss Summary Sheet
Hurricane Irene – August 2011

Event Date and Description (incl. DR# if applicable): Hurricane Irene DR4021

Life Safety (evacuation, sheltering, injuries, deaths):

Loss of Service (e.g. road closures, utility outages, commercial closures – include location, time of closure and/or number of affected):

Infrastructure Damage (e.g. roads, bridges, culverts, treatment facilities, lift stations, etc.):

Facility/Structural Damage – Public (e.g. police, school, etc.):

Facility/Structural Damage – Private (e.g. residential, commercial property, etc.):

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Capability Assessments

(Worksheet #2)

- **Building Code Official**
- **Municipal Engineer**
- **Land Use Planner**
- **Municipal Clerk**
- **Floodplain Administrator**
- **CFO/Fiscal Representative**

CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #2 – Municipal Capability Assessment

Please send completed Word electronic-versions of these worksheets to:
Jonathan Raser and Paul Miller at
Jonathan.raser@tetratech.com and Paul.miller@tetratech.com
by **October 22, 2015**
973-630-8042 / 973-630-8344

Municipality: _____

Name & Title of Individual Completing Survey: _____

1. **Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation. In addition, indicate the code chapter, and name of plan including any explanation of authority in the right-most column.

Who can assist with completing this table: Municipal Planner, Clerk, Code Official. Refer to your municipal codes and ordinances, Master Plan.

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan				
Capital Improvements Plan				
Floodplain Management - Basin Plan				
Stormwater Management Plan				
Open Space Plan				
Stream Corridor Management Plan				
Watershed Management or Protection Plan				
Economic Development Plan				

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NFIP Compliance (Worksheet #3)

- We need to know specific information about the NFIP program in your community.
- Your NFIP Floodplain Administrator (FPA) **MUST** be actively involved in the update process.
- NFIP Administrator to work with Tetra Tech to complete **Worksheet #3** (best done in a short interview – live or phone)
- Identify your NFIP Administrator; give them worksheet and have them contact us


CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #3 – NFIP Floodplain Administrator


Please send completed Word electronic-versions of these worksheets to:
Jonathan Raser and Paul Miller at
Jonathan.raser@tetratech.com and Paul.miller@tetratech.com
by October 22, 2015
973-630-8044; 973-630-8344

Municipality: _____

NFIP Floodplain Administrator Name/Title: _____

Flood Vulnerability Summary

1. Does the municipality maintain lists/inventories of properties that have been flood damaged? If so, does this inventory identify property owners who are interested mitigation (e.g. elevation, acquisition)?
2. Characterize/quantify the number of structures damaged during Sandy or other events. If possible, can you provide a table of these structures indicating the number of residential/commercial/industrial?
3. Do you make Substantial Damage estimates, and how many were declared for Sandy or other events?
4. How many are interested in mitigation (elevation or acquisition), and how many are currently in the process of mitigation?
5. What is the funding source(s) for those being mitigated (e.g. property owner, flood insurance and ICC, grant funding)?

Update Progress on 2010 Actions (Worksheet #4)


CAPE MAY COUNTY HAZARD MITIGATION PLAN UPDATE
Worksheet #4 – Mitigation Action Review Worksheet for Cape May County


Please complete responses below and send electronic Word version by September 30, 2015 to:
Jonathan Raser or Paul Miller
Phone: 973-630-8044; 8344 E-mail: jonathan.raser@tetratech.com or paul.miller@tetratech.com

Municipality: _____

Name & Title of Individual Completing Worksheet: _____

Who can provide you information about past mitigation actions: See the 'Responsible Party' column in the table below which identifies who put this action in the 2010 HMP (e.g., DPW, Engineer, Code Official, Planner, OEM Coordinator).

Please use the following table to indicate progress and next steps on your community's mitigation strategy identified in the 2010 HMP. Please be as detailed as possible.

2010 Mitigation Action	Responsible Agency	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2015 HMP or Discontinue)	Describe Next Step 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
<i>Example: Elevate Main Street Bridge</i>	DPIW	No Progress	1. 0% complete 2. Budget and personnel constraints have restricted this action from moving forward 3. No funding secured	Include in 2015 HMP	1. Elevate Main Street Bridge above the base flood elevation. 2. (If you chose 'Discontinue,' here is an example: The Town does not have the authority to retrofit this bridge. It is owned by the State.
CMC-1a: Where appropriate	Municipality	Choose an item	1	Choose an	1

Schedule

- Municipal Data Collection
Local Support Meetings: November 2015
- FEMA Mitigation Workshop: November 2015
- Draft Plan to NJOEM: February 2016
- Municipal Annex Completion Workshop: February 2016
- Final Plan to State and FEMA Region II: April 14, 2016
- County and Municipal Plan Adoption: Spring 2016

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QUESTIONS?

Thank you!

Jonathan Raser, CFM
Paul Miller, CFM
Tetra Tech, Inc.

Jonathan.raser@tetrattech.com
paul.miller@tetrattech.com



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CAPE MAY COUNTY HAZARD MITIGATION PLAN – 2016 UPDATE
SIGN-IN SHEET
TOPIC: Webinar
MEETING DATE: October 15, 2015



Name	Title	Agency/Municipality/Department	Phone Number	E-mail
Katelynn Wintz		County Planning Dept		
Scott Morgan		County OEM		
Jill Gougher		Stone Harbor		
Harry deButts		Avalon OEM		
Irene Schreiner		Cape May Point OEM		
John Berg		Dennis OEM		
Gary Douglass		Lower OEM Public Works		
Eileen Kreis		Lower - Managers Office		
Matt von der Hayden		Ocean City Planning		
Benny Tafoya, CFM		Ocean City GIS		
Neil Byrne		Sea Isle City Construction Official		

Community Rating System and Hazard Mitigation Planning

Atlantic-Cape Coastal Coalition -
November Meeting

November 5, 2015

What are We Going to Talk About?

- NFIP and Flood Insurance Reform
- What Can Communities do to Mitigate Rising Flood Insurance Rates?
- Community Rating System – The Basics (abridged)
- Atlantic and Cape May CRS Communities
- Addressing Local CRS Activity 510 Requirements in a Multi-Jurisdictional Hazard Mitigation Planning Process
- Available CRS and Activity 510 Resources

National Flood Insurance Program (NFIP) and Reform

- Only practical insurance vehicle for property owners to insure against flood risk
- The NFIP is broke - over \$25 billion in debt to the U.S. Treasury
- Congress has acted to reform the NFIP through Biggert-Watters 2012 (BW-12) and the Homeowner Flood Insurance Affordability Act
- Rate increases are happening now, and will continue to increase at about 18% annually, possibly until actuarial rates are realized
- Communities and their leaders feel a need to do something to meet constituent concerns...



Rising Flood Insurance Rates – What Can Communities Do?

- **Support Mitigation of Structures (public and private) – Elevations, Acquisitions, Floodproofing**
 - Requires a local DMA-2000 Hazard Mitigation Plan (HMP) for Federal mitigation grant funding
 - Countywide HMPs and updates are SOP for the foreseeable future
- **Community Rating System (CRS)**
 - Requires our communities to have a Floodplain Management Plan (FMP) – CRS Activity 510

Countywide HMPs can fulfill the FMP requirement, but:

- Overall FMP Credit is based on what the community does in the local planning process,
- CRS Class 4 Pre-Requisites go beyond what a typical Countywide HMP process can realistically offer

NFIP - Community Rating System (CRS)

Promotes local floodplain management practices above and beyond the minimum NFIP requirements by offering reduced flood insurance premiums.

CRS Features

- 19 creditable activities in four categories
- Can get credit from 94 elements
- Flood insurance discounts ranging from 5-45%

CRS Class	Credit Points	Premium Reduction	
		In SFHA	Outside SFHA
1	4,500+	45%	10%
2	4,000 -4,499	40%	10%
3	3,500 -3,999	35%	10%
4	3,000 -3,499	30%	10%
5	2,500 -2,999	25%	10%
6	2,000 -2,499	20%	10%
7	1,500 -1,999	15%	5%
8	1,000 -1,499	10%	5%
9	500 -999	5%	5%
10	0-499	0	0

Series 300 Public Information	Series 400 Mapping and Regulations	Series 500 Flood Damage Reduction	Series 600 Flood Preparedness
Elevation Certificates Map Information Service Outreach Projects Hazard Disclosure Flood Protection Information Flood Protection Assistance Flood Insurance Promotion	Floodplain Mapping Open Space Preservation Higher Regulatory Standards Flood Data Maintenance Stormwater Management	Floodplain Mgt. Planning Acquisition and Relocation Flood Protection Drainage System Maintenance	Flood Warning Program Levee Safety Dam Safety

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NFIP and CRS Statistics – New Jersey

County	# Policies	Annual Premiums	# CRS Policies	% of CRS Policies	Annual CRS Savings
Atlantic	32,045	\$27,693,488	28,881	90%	\$3,879,101
Bergen	14,852	\$21,427,799	2,914	20%	\$696,454
Burlington	3,797	\$4,537,025	1,194	31%	\$179,012
Camden	2,245	\$2,602,823	0	0%	\$0
Cape May	54,940	\$38,724,693	46,216	84%	\$6,600,410
Cumberland	764	\$832,425	45	6%	\$8,885
Essex	4,761	\$7,341,586	0	0%	\$0
Gloucester	1,359	\$1,669,789	93	7%	\$5,635
Hudson	18,890	\$13,864,914	0	0%	\$0
Hunterdon	1,132	\$1,608,657	257	23%	\$42,645
Mercer	2,303	\$3,084,233	0	0%	\$0
Middlesex	4,596	\$5,403,852	0	0%	\$0
Monmouth	23,407	\$21,185,898	8,037	34%	\$1,175,725
Morris	4,504	\$7,555,887	1,250	28%	\$270,374
Ocean	52,814	\$53,272,573	39,613	75%	\$6,921,740
Passaic	4,345	\$7,431,845	2,073	48%	\$472,391
Salem	2,007	\$2,789,423	0	0%	\$0
Somerset	2,986	\$4,620,522	871	29%	\$128,102
Sussex	393	\$370,369	0	0%	\$0
Union	5,831	\$9,398,953	1,157	20%	\$203,858
Warren	668	\$1,003,759	0	0%	\$0
TOTAL	238,639	\$236,420,513	132,601	56%	\$20,584,333

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Cape May County HMP Process and CRS Implications

- Cape May County is currently facilitating the update of the 2010 County HMP, with the participation of all municipalities.
- The Updated HMP will meet at least the minimum criteria for CRS Activity 510.
- Depending on CRS-community specific timelines and CRS rating goals, the countywide HMP process may not meet all of your needs or interests.
- It is critical that each CRS community understand what the County-wide HMP process is providing, and make local accommodations if this process falls short of your specific CRS needs.
- Critical information regarding CRS requirements and Activity 510 credit may be found at: <http://crsresources.org/>

Activity 510 Floodplain Management Planning

- **Class 9 Pre-Requisite:**
“Category C” Communities (those with more than 10 RL/SRL properties) – Must prepare a plan for addressing its repetitive loss flood problem through either a Floodplain Management Plan or Repetitive Loss Area Analysis.
- **Class 4 Pre-Requisite:**
Activity 510 – The community must have adopted and be implementing a Floodplain Management Plan that receives at least 50% of the maximum credit under Activity 510.

- 3 creditable elements (not additive):
- Floodplain Management Planning (FMP)= 382 points
 - Repetitive Loss Area Analysis (RLAA) = 140 Points
 - Natural Functions Plan (NFP) = 100 Points



Floodplain Management Planning - The 10-steps

Table 510-1. Planning steps for mitigation and for the CRS.

Multi-hazard Mitigation Planning	CRS	Maximum
Phase I – Planning process		
§201.6(c)(1)	1. Organize	15
§201.6(b)(1)	2. Involve the public	120
§201.6(b)(2) & (3)	3. Coordinate	35
Phase II – Risk assessment		
§201.6(c)(2)(i)	4. Assess the hazard	35
§201.6(c)(2)(ii) & (iii)	5. Assess the problem	52
Phase III – Mitigation strategy		
§201.6(c)(3)(i)	6. Set goals	2
§201.6(c)(3)(ii)	7. Review possible activities	35
§201.6(c)(3)(iii)	8. Draft an action plan	60
Phase IV – Plan maintenance		
§201.6(c)(5)	9. Adopt the plan	2
§201.6(c)(4)	10. Implement, evaluate,	26
Total		382

Note: Maximum of 382 points available here...but:

Current and potential Atlantic and Cape May County CRS communities need to have an FMP, which requires points in each planning step.

Communities looking to become Class 4 or better have further point requirements in certain planning steps.

Step 1 – Organize to Prepare the Plan

Only 15 points available at this step...but it is critical that you have points in each of the 10 areas, and how you organize and plan locally has huge ramifications on how your community will be credited in the other planning steps.

This HMP Update process will include a County-wide Steering/Planning Committee that will meet HMP requirements and fulfill at least minimum CRS Activity 510 requirements, but will not be sufficient to meet CRS Class 4 Pre-Requisites.

CMC HMP Update Organization:

- The County has organized a Steering/Planning Committee to guide and direct the process, facilitate municipal participation/representation, and perform certain HMP tasks/requirements on behalf of the municipal planning partners.
- All municipalities have provided a Letter of Intent to Participate in the plan update process, which identifies:
 - Primary and Alternate Points of Contact and their NFIP Floodplain Administrator
 - Identifies participation expectations, which includes municipal attendance at County-led HMP meetings.

The CRS requires, and the CMC HMP Update process encourages and promotes, the formation of local HMP/CRS planning committees to provide broad-based input to the planning process. Planning Committee composition and meeting requirements are addressed in the “CRS Credit for Planning Committees” document (handout and online at <http://crsresources.org/>).

Multi-Jurisdictional Planning Committees are recognized under CRS, but must meet the following:

- **The community must send at least two representatives to the multi-jurisdictional committee,**
- **At least half of the community’s representatives must be stakeholders from outside the local government, and**
- **At least half of the representatives must attend all the meetings of the multi-jurisdictional committee.**

Step 1 – Organize to Prepare the Plan

To meet CRS Step 1 Criteria, each municipal planning committee must meet a sufficient number of times to involve the members in the following key steps of the planning process (e.g., at least one meeting on each step):

CRS Required Planning Committee Meetings	Meetings Held for CMC HMP Update Process	Local Planning Committee (PC) Meetings	Other Relevant Planning Meetings/Processes
Step 4. Assess the hazard	Project Kick-Off Meeting (Sept. 17, 2015) Data Collection Webinar (Oct. 15, 2015)	Local PC Meetings to support data collection and completion of Worksheets	<ul style="list-style-type: none"> Atlantic Cape Coastal Coalition Meetings and Efforts CRS Program-Related meetings Floodplain Management Planning (Avalon) Getting To Resiliency (JCNER and Sustainable NJ) Strategic Recovery Planning Reports (DCA / CDBG-DR Funding)
Step 5. Assess the problem	Project Kick-Off Meeting (Sept. 17, 2015) Data Collection Webinar (Oct. 15, 2015)	Local PC Meetings to support data collection and completion of Worksheets	
Step 6. Set goals	County Steering/Planning Committee Meeting		
Step 7. Review possible activities	Mitigation Alternative Review (SWOO) Workshop	Local PC Meetings to support update of mitigation strategy and completion of municipal annex	
Step 8. Draft an action plan	Mitigation Strategy Workshop	Local PC Meetings to support update of mitigation strategy (incl. Action Worksheets) and completion of municipal annex	

Step 2 – Involve the Public

Background: The planning process must include an opportunity for the public to comment on the plan during its development and before its approval. Members of the public may be part of the planning committee created under Step 1 or they may be organized as a separate committee.

For this credit, the term “public” includes residents, businesses, property owners, and tenants in the floodplain and other known hazard areas as well as other stakeholders in the community, such as developers and contractors, civic groups, environmental organizations, academia, non-profit organizations, major employers..

2. Involve the public. (max: 120)
 - a. Planning process conducted through a planning committee (60)
 - b. Public meetings held at the beginning of the planning process (15)
 - c. Public meeting held on draft plan (15)
 - d. Other public information activities to encourage input (Up to 30)

Class 4 Pre-Requisite: 50% of the maximum credit (120 * 0.5 = 60 points) for this step

Local credit for this step will largely be the responsibility of the community to organize a suitable planning committee and meet the “public meeting” requirements.

Step 2 – Involve the Public

The CMC HMP Update process has a public and stakeholder outreach component which includes:

Public Project Website: www.capemaycountyhmp.com

The project website will provide access to the draft plan documents, and provides links to the following surveys:

- Citizen Hazard Preparedness and Mitigation Survey
- Targeted Stakeholder Surveys (Academia, Law Enforcement, Firefighter, EMS, Utility, Hospital and Healthcare, Business and Commerce)
- Stakeholders/Subject Matter Experts are being engaged to assist with development of the Risk Assessments, and to support other aspects of the planning process.
- Atlantic and Cape May CRS Communities are working towards developing a Program for Public Information (PPI) – CRS Activity 330

Step 3 – Coordinate

Background: Most communities' flood problems have been studied already. There are likely to be existing plans, studies, and reports on flooding that need to be reviewed. There also may be flood protection activities being considered or implemented by other agencies. This planning step credits incorporating other plans and other agencies' efforts into the floodplain management plan.

3. Coordinate with other agencies. (max: 35)
 - a. Review of existing studies and plans [REQUIRED] (5)
 - b. Coordinating with communities and other agencies (Up to 30)

- Item 3a [REQUIRED]: Incorporated into HMP process. Communities are responsible for completing worksheets and assuring that such coordination of available information is documented in the hazard profiles and their municipal annexes.
- Item 3b: TT is working with a broad range of such "stakeholders" as part of the CMC Update process, but **communities should expand on this and document in their HMP annexes.**

Step 4 – Assess the Hazard

Background: This step focuses on the sources, frequency, extent, and causes of flooding. It needs to describe the local flood hazard and not be a generic discussion of flooding. It needs to discuss how often it floods, the locations of areas that flood, the depth of flooding, and the source or cause of the flooding.

4. Assess the hazard. (max: 35)
 - a. Plan includes an assessment of the flood hazard [REQUIRED] with:
 - (1) A map of known flood hazards (5)
 - (2) A description of known flood hazard (5)
 - (3) A discussion of past floods (5)
 - b. Plan includes assessment of less frequent floods (10)
 - c. Plan includes assessment of areas likely to flood (5)
 - d. The plan describes other natural hazards [REQUIRED FOR DMA] (5)

The HMP will meet 4a-d within the context of a county-wide HMP planning process, however local information is key to meeting the intent of this step under either planning process. Communities should document local and less frequent areas of flooding and their causes.

Local hazard assessment information is documented in the Hazard Profiles (Section 5.4.x) and in Municipal Annexes (Section 9).

Step 5 – Assess the Problem

Background: This step looks at the impact of hazards on the community, by collecting and summarizing data on what is at risk.

Class 4 Pre-Requisite: 50% of the maximum credit for this step (52 * 0.5 = 26 points)

5. Assess the problem. (max: 52)
 - a. Summary of each hazard identified in the hazard assessment and their community impact [REQUIRED] (2)
 - b. Description of the impact of the hazards on: (max: 25)
 - (1) Life, safety, health, procedures for warning and evacuation (5)
 - (2) Public health including health hazards to floodwaters/mold (5)
 - (3) Critical facilities and infrastructure (5)
 - (4) The community's economy and tax base (5)
 - (5) Number and type of affected buildings (5)
 - c. Review of all damaged buildings/flood insurance claims (5)
 - d. Areas that provide natural floodplain functions (5)
 - e. Development/redevelopment/Population Trends (7)
 - f. Impact of future flooding conditions outline in Step 4, item c (5)

The HMP will meet 5a-f within the context of a county-wide HMP planning process, however local information is key to meeting the intent of this step under either planning process.

Specific areas that the HMP process may not adequately address, and will be incumbent on the CRS-interested communities to provide, include:

- Procedures for Warning and Evacuation
- Public Health
- The communities economy and tax base
- Areas that provide natural floodplain functions
- Development/redevelopment (Worksheet 6)

Step 6 – Set Goals

Background: The goals should set the context for the subsequent review of floodplain management activities and drafting of the action plan. They should incorporate or be consistent with other community goals for the affected areas. A multi-hazard mitigation plan should have goals that address all the major hazards that face the community. (2 points!)

The CMC HMP Steering Committee will be reviewing and updating the Goals (and Objectives) of the 2010 plan, with opportunities for input from all participating municipalities.

Cape May County 2010 HMP Goals:

- Protect Life and Property
- Increase Public Awareness and Preparedness of Natural Hazards and their Risks
- Promote Sustainability (and Continuity of Operations and Government)
- Enhance Disaster Preparedness, Response and Recovery
- Protect Open Space, the Environment and Natural Resources
- Promote Partnerships

Step 7 – Review Possible Activities

Background: A systematic review of a wide range of activities to ensure that all possible measures are explored, not just the traditional approaches of flood control, acquisition, and regulation of land use.

7. Review possible activities. (max: 35)
 - a. Preventive activities (5)
 - b. Floodplain Management Regulatory/current & future conditions (5)
 - c. Property protection activities (5)
 - d. Natural resource protection activities (5)
 - e. Emergency services activities (5)
 - f. Structural projects (5)
 - g. Public information activities (5)

This will be accomplished as part of the HMP process. We will hold a facilitated workshop with community representative and stakeholders to conduct this review and develop a “mitigation catalog” to identify potential actions and initiatives in each of the six CRS mitigation categories.

Step 8 – Draft an Action Plan

Background: An action plan is drafted that selects and specifies those activities appropriate to the community's resources, hazards, and vulnerable properties.

8. Draft an action plan. (max: 60)
 - a. Actions must be prioritized [REQUIRED]
 - (1) Recommendations for activities from two of the six categories (10)
 - (2) Recommendations for activities from three of the six categories (20)
 - (3) Recommendations for activities from four of the six categories (30)
 - (4) Recommendations for activities from five of the six categories (45)
 - b. Post-disaster mitigation policies and procedures (10)
 - c. Action items for mitigation of other hazards (5)

Class 4 Pre-Requisite: 50% of the maximum credit ($60 * 0.5 = 30$ points) for this step

- The HMP process will focus on the update of local mitigation strategies (action plans) and will include a Mitigation Strategy Workshop for all planning partners
- Communities must identify:
 - Progress on prior mitigation strategies (Worksheet 4)
 - Identify new actions/initiative to address their vulnerabilities and meet the planning goals
- Updated Mitigation Strategies will need to be documented on Action Worksheets to fulfill both HMP and CRS Activity 510 requirements, which will identify:
 - Responsible Party
 - Timeline
 - Source(s) of Funding
 - Priority, including a review of Costs vs. Benefits

Step 9 – Adopt the Plan

The points for this step are provided if the plan and later amendments are officially adopted by the community's governing body. The plan must be an official plan of the community, not an internal staff proposal.

"Adopted" means that there is a resolution or other formal document that is voted on by the community's governing body. A note in the minutes or passage via a consent agenda is not credited.

When a multi-jurisdictional plan is prepared, it must be adopted by the governing body of each community seeking CRS or multi-hazard mitigation plan credit.

Step 10 – Implement, Evaluate and Revise

The key to this step is the annual evaluation report on progress in implementing the plan. Failure to submit the evaluation report with the community's annual recertification will result in loss of the planning credit (i.e., FMP = 0). This can cause a Category C repetitive loss community to revert to a Class 10.

10. Implement, evaluate and revise. (max: 26)
 - a. Procedures to monitor and recommend revisions [REQUIRED] (2)
 - b. Same planning committee or successor committee that qualifies under Section 511.a.2 (a) does the evaluation (24)

If a community receives credit as a result of participation in a multi-jurisdictional plan that includes action items for each community, the annual evaluation report must cover those action items. This can be done either by a multi-jurisdictional planning committee or through separate submittals by each community.

The County will include an annual plan evaluation process for the HMP, but each CRS community should identify their specific annual evaluation and reporting plan to meet their CRS needs and interests.

The community must update the plan at least every five years. The update is due by October 1, five years after the plan was adopted. The plan update will be reviewed for CRS credit according to the Coordinator's Manual currently in effect, not the version used when the community originally requested this credit.

How is a Local FMP Documented in the CMC HMP?

Section 3 – Planning Process and Appendix # (Municipal Participation Matrix): Identifies how each community participated and who was involved.

Section 5 – Risk Assessment: Local information in the Flood Hazard Profile

Section 6 – Mitigation Strategy: Goals and Objectives; Summary of Federal, State, Regional and local floodplain management capabilities

Section 9 – Jurisdictional Annexes: Community-specific chapters to identify:

- Local vulnerabilities, to include specific flood problem areas that may not be identified without local knowledge
- Local capabilities, including a description of your floodplain management program and opportunities for improvement, and integration of HMP/FMP with other plans/programs
- Identifying your updated Mitigation Strategy, which includes FEMA Action Worksheets, and a summary of project prioritization.

For more information on the CRS:

<http://crsresources.org/>



CRS Resources Home

This is the temporary location of the CRS Resources webpage. This website is provided for webinar participants, users groups, and CRS coordinators to obtain reference materials related to ongoing refinements of the CRS. Here you will find CRS guidance documents, worksheets, and tools relevant to the activities to be credited under the New CRS Coordinator's Manual.

Use the menu above to find resources organized by CRS Activity.

[Download the 2013 CRS Coordinator's Manual](#)

New communities can click here to find the CRS application and Quick Check.



Questions

Thank you!

Jonathan Raser, CFM

Hazard Mitigation Program
Manager

Tetra Tech, Inc.

Jonathan.raser@tetrattech.com

(973) 630-8042

COASTAL COALITION MEETING

Sign-In Sheet

Please print clearly

Date 11/5/15

Name	Agency / Municipality / Company	Phone	Email
Jonathan Raser	Tetra Tech, Inc. / CAPE MAY COUNTY	(973) 630-8042	JONATHAN.RASER@TETRATECH.COM
Jack Heide	Sustainable Jersey	(541) 505-0654	heidej@tcnj.edu
Edie Kopsitz	CAPE MAY CITY	(609) 884-9555	EKOPSITZ@CAPEMAYCITY.ORG
ED MAHANEY	CAPE MAY CITY	(609) 425-1774	emahaney@capemaycity.org
Jason Dilworth	Cape May City	609 884-9556	jdilworth@capemaycity.org
Sarah Watson	DEP / NOAA	215-620-7494	swatson@gmail.com
DONNA Peterson	Ventnor OEM	609-823-7919	oem@ventnorcity.org
Chris Ridinger	WEST WILDWOOD	609-522-4845	CRidinger@westwildwood.org
Tom Heist	Ocean City / Heist Ins.	609-736-7223	theist@heistshw.com
LISA Aucutt	JCNERR	609-812-0649 X204	lucutt@marine.rutgers.edu
JENNA GATTO	JCNERR	812-0649 X213	GATTO@MARINE.RUTGERS.EDU
VERA WEISS	PERAK WEISS PA	609-822-9616	PWARCHITECT@COMCAST.NET
Anthony Mazzari	Soil Systems	609-412-6668	AMAZZARI@COMCAST.NET
ED WALBERG	RU+W	609 680 8800	ED.WALBERG@RUE.COM
Amy Williams	Stevens Inst.	609-923-5592	oceanwaves11@gmail.com
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16-C Rev. 03

Dino Cavalieri

Ventnor

Frank Mahoney

Whelan / Mazzei

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CAPE MAY COUNTY



EMERGENCY MANAGEMENT COMMUNICATIONS CENTER
30 WEST MECHANIC STREET, CAPE MAY COURT HOUSE, NJ 08210
{O} 609.463.6570 {F} 609.463.0252 {Email} mpagliughi@co.cape-may.nj.us

Gerald M. Thornton, Freeholder

Martin L. Pagliughi, Director

Scott G. Morgan, Deputy

MUNICIPAL COORDINATORS MEETING

January 28, 2016 -- 2PM

AGENDA

1. WINTER STORM JONAS UPDATE – DIRECTOR PAGLIUGHI / DEPUTY MORGAN (TDMA / SIT REPS/ CODE BLUE).
2. TETRA TECH – KHRIS MATTSON – 2017 ESF RE-CERTIFICATION.
3. TETRA TECH – JONATHAN RAZER -- HAZARD MITIGATION GRANT PROGRAM / PLAN RECERTIFICATION – UPDATE.
4. AMERICAN RED CROSS – JIM EDEN - FIRE DISPLACEMENT PLAN.
5. NJSP OEM – SOUTH REGION – DET. DAN CUNNING.

A handwritten signature in black ink, appearing to read "Martin L. Pagliughi".

Martin L Pagliughi
Director
Cape May County
Office of Emergency Management

**February 10, 2016 – Goals and Objectives Webinar
Roll Call**

Avalon Borough:

Harry DeButts

Cape May City:

Mayor Mahaney
Richard Lundholm
Joe Picard
Jason Dilworth
Edie Kopsitz
Dan Shustack

Cape May Point Borough:

Anita vanHeeswyk

Dennis Township:

Someone did respond when called, but not clear who.

Lower Township:

Richard Herron

North Wildwood City:

Patrick Malia
Ronald Simone

Ocean City:

Matt von der Hayden
Benny R. Tafoya, CFM

Sea Isle City:

Neil Byrne
Mike Jargowsky

Stone Harbor Borough:

Grant Russ
Jill Gougher
Roger Stanford

Upper Township:

Scott Morgan
Paul Dietrich

West Wildwood Borough:

Christopher Ridings

Ray Poudrier

Wildwood City:

Steve Booy

Wildwood Crest Borough:

Patrick Malia

Woodbine Borough:

Jim Gurdziel

**A Workshop to Review and Update Your
Mitigation Strategy**
Cape May County Hazard Mitigation Plan – 2016 Update



**Wednesday, February 17, 2016
10:30 – 12:30 pm**

Location

*Cape May County EMCC
30 West Mechanic Street, Cape May Court House, NJ*

Agenda

Welcome and Introductions – Cape May County

Hazard Mitigation Planning - Tetra Tech

- Overview of where we are in the planning process
- Focus today on mitigation actions

Mitigation Strategy - State OEM and FEMA

- Analyze a range of actions
- Review recent FEMA publication – “Mitigation Ideas”
- Align with community capabilities
- Evaluate and prioritize actions
- Implementation of actions
- Available mitigation grant opportunities (HMGP, 2016 FMA)

Hazard Mitigation Plan – Forward Actions - Tetra Tech

Questions / Assistance – State/FEMA/Tetra Tech







WHO?

- OEM – Police, Fire, EMS
- Engineering, DPW, Roads and Bridges
- Transportation
- Critical Systems- Water, Sanitary, Electric?
- Financial, Administrative, Social, Political
- Floodplain Administrator
- Planners
- Environmental



The Benefits of Hazard Mitigation

- Saves lives and property
- Allows a more speedy recovery
- Saves money!

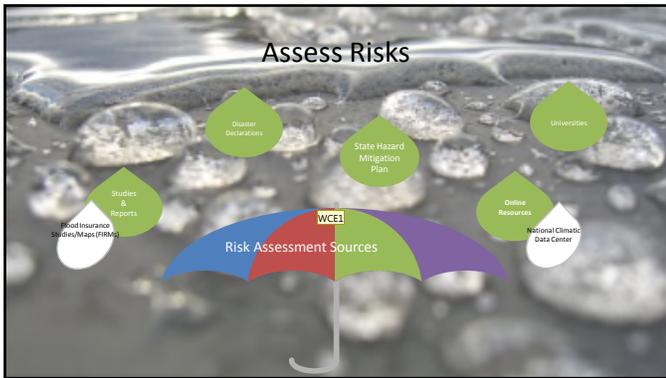


Assess Risks

- Describe Hazards
- Identify community assets
 - Critical facilities
 - Cultural assets
 - Vulnerable populations
- Assess impact of hazards on community assets
- Summarize vulnerability
- Multi-Jurisdictional Risk Assessment







A slide titled "Assess Risks" with a bulleted list on the left and a map on the right. The list includes "Describe Hazards" with sub-points for Type, Location, and Extent (Magnitude or strength). The map shows a coastal area with a legend and a "FIRM" (Flood Insurance Rate Map) overlay.

Slide 8

WCE1 This graphic seems to extend off the page. Is this ok?

Ward, Claire E, 11/18/2015

Assess Risks

- Describe Hazards
 - Historic occurrences
 - Future probability
 - Impact
 - NFIP structures





What Is Important to this community?

Did you check with everyone?

NFIP Stats

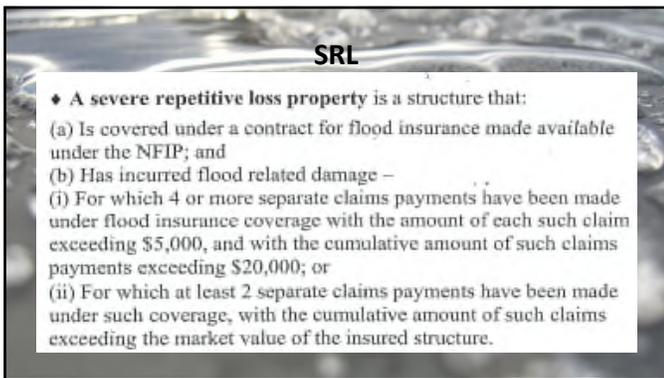


Losses Paid Since 1978

- 1: Louisiana- **\$16,714,958,302**
- 2: Texas- **\$6,082,532,651**
- 3: New Jersey- **\$5,720,635,233**
- 4: New York- **\$5,218,949,383**
- 5: Florida- **\$3,883,808,457**







RL

A repetitive loss property is a structure covered by a contract for flood insurance made available under the NFIP that:

(a) Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and

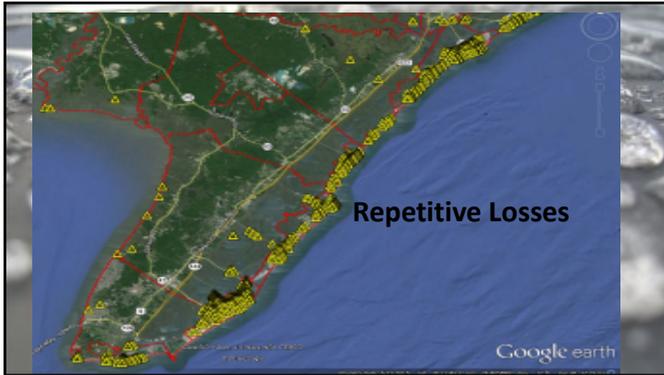
(b) At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

FMA-RL = 204

Community Name	Mitigated?	Insured?	Dt of Loss	Occupancy	Zone	Firm	Building Payment	Contents Payment	Building Value
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	AE	N	100,000.00	50,000.00	214,950
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	A07	N	89,675.11	16,600.00	220,510
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	A07	N	26,326.99	0.00	83,779
AVALON, BOROUGH OF	NO	NO	01/28/1998	NON RESIDENT	A07	N	29,796.34	43,024.70	87,120
AVALON, BOROUGH OF	NO	SDF	10/29/2012	2-4 FAMILY	A07	N	107,669.32	0.00	389,361
CAPE MAY, CITY OF	NO	YES	10/29/2012	SINGLE FMY	A07	N	41,569.79	0.00	72,770
CAPE MAY, CITY OF	NO	YES	10/29/2012	SINGLE FMY	AE	N	108,931.20	8,195.00	342,584
CAPE MAY, CITY OF	NO	NO	10/07/2006	SINGLE FMY	A07	N	11,498.90	0.00	57,230
LOWER, TOWNSHIP OF	NO	NO	10/29/2012	NON RESIDENT	A07	N	27,500.00	31,500.00	184,626

FMA-SRL=421

Community Name	Mitigated?	Insured?	Dt of Loss	Occupancy	Zone	Firm	Building Payment	Contents Payment	Building Value
AVALON, BOROUGH OF	NO	SDF	10/29/2012	SINGLE FMY	A07	Y	7,969.74	0.00	312,417
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	AE	N	100,000.00	50,000.00	214,950
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	A07	N	89,675.11	16,600.00	220,510
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	A07	N	0.00	16,200.00	0
AVALON, BOROUGH OF	NO	SDF	10/29/2012	SINGLE FMY	A06	N	55,011.37	8,000.00	146,010
AVALON, BOROUGH OF	NO	NO	12/11/1992	SINGLE FMY	A07	N	2,812.68	0.00	77,100
AVALON, BOROUGH OF	NO	SDF	10/29/2012	NON RESIDENT	AE	N	299,530.71	0.00	1,307,271
AVALON, BOROUGH OF	NO	SDF	02/04/1998	NON RESIDENT	AE	N	29,300.00	30,500.00	325,467
AVALON, BOROUGH OF	NO	NO	01/28/1998	NON RESIDENT	A07	N	29,796.34	43,024.70	87,120









FMA – Why it Matters

Hazard Mitigation Assistance Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program
February 27, 2015

Table 2: Cost-Share Requirements

Programs	Mitigation Activity (Percent of Federal/Non-Federal Share)	Recipient Management Costs (Percent of Federal/Non-Federal Share)	Subrecipient Management Costs (Percent of Federal/Non-Federal Share)
HMGP	75/25	10/90	60/40
PDM	75/25	75/25	75/25
PDM – subrecipient is small and disadvantaged community	90/10	75/25	50/50
PDM – Tribal Recipient/subrecipient is small and impoverished	90/10	90/10	90/10
FMA – insured properties and parking grants	75/25	75/25	75/25
FMA – repetitive loss property ⁽¹⁾	90/10	90/10	90/10
FMA – repetitive loss property ⁽²⁾	100/0	100/0	100/0

(1) Subgrantees should consult their State Hazard Mitigation Office (SHMO) for the amount or percentage of HMGP subrecipient management cost being their State has determined to be passed through to subrecipients.
 (2) To be eligible for an increased Federal cost share, a FEMA-approved State or Tribal (Standard or Enhanced) Mitigation Plan that addresses repetitive loss properties must be in effect at the time of award, and the property that is being submitted for consideration must be a repetitive loss property.

Develop the Mitigation Strategy: Actions

<p>Local Plans and Regulations Government authorities, policies, or codes that influence the way land and buildings are developed</p> <p> Natural Systems Protection Actions that minimize damage and losses and also preserve or restore the functions of natural systems</p> <p></p>	<p>Structure and Infrastructure Projects Modifying existing structures or infrastructure to remove them from a hazard area or construction of new structures to reduce impacts of hazards</p> <p></p> <p>Education and Awareness Programs Sustained programs to educate the public and decision-makers about hazard risks and community mitigation programs</p> <p></p>
--	---

Develop the Mitigation Strategy: Actions



Local Plans and Regulations

- Amend the zoning ordinance to permit only open space use within the floodplain
- Incorporate Mitigation into Local Plans
- Adopt and Enforce Building Codes and Standards
- Improve Stormwater Management Planning

- **INTIGRATE plans and codes**

Develop the Mitigation Strategy: Actions



Natural Systems Protection

- Minimize damage and loss or preserve and restore natural systems
 - Stabilize erosion hazard areas
 - Require water conservation during droughts
 - Encourage conservation easements



Develop the Mitigation Strategy: Actions



- National preventative programs
- Mailings to hazard-prone communities
- Web sites with maps and information
- Presentations to community groups
- Radio or TV spots

Implement Plan and Monitor Progress

The Mitigation Plan is a Living Document

Process Needed

- Monitor
- Evaluate
- Update

Conditions Change
New Information
New events
Progress made on actions

Implement Plan and Monitor Progress

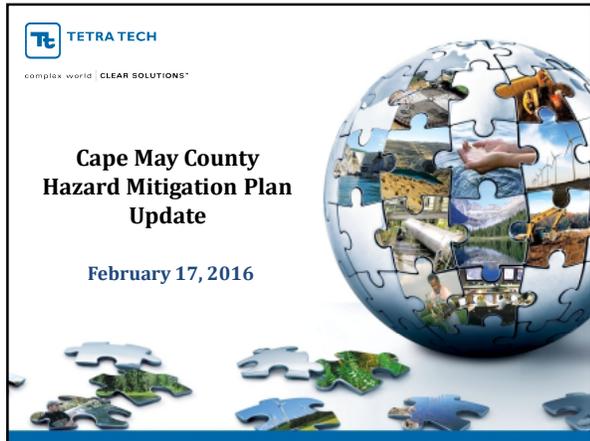
- Evaluate the plan
 - Assessing the effectiveness of the plan

WHO	HOW	WHEN
Lead Department Responsible	Method for Tracking Actions and Progress and Evaluating Project Effectiveness	Schedule

NEXT STEPS

- Pending Disaster
- LOI's----->
- Document Damages
- 406 (PA) Bats First





Today's Agenda

- Welcome and Introductions (Cape May County)
- Project Status (Tetra Tech)
- Mitigation Strategy (FEMA/NJOEM)
- Action Items and Schedule (Tetra Tech)



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Cape May County and DMA 2000

The mitigation plan update will:

- Help Cape May County prepare for and mitigate the effects of disasters
- Continue to allow the county and participating partners to be eligible for pre and post disaster mitigation funding (Hazard Mitigation Assistance – PDM, FMA, HMGP)
- Support CRS participation/rating of municipalities

A **Local Mitigation Plan** demonstrates the jurisdiction's commitment to reducing risk and serves as a guide for decision makers as they commit resources to minimize the effects of natural hazards.



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Where are we now?

- Organize the Resources – Municipal Kick-Off Meeting (September 2015)
- Data Collection – Municipal Data Collection (Worksheet) Webinar (October 2015)
- Atlantic-Cape May Coastal Coalition –CRS Activity 510 Credit in Countywide HMP Update
 - Presentation at November 2015 meeting
 - Update at March 2016 meeting
- Re-Assess Risk –
 - TT Updating all Hazard Profiles and Vulnerability Assessment
 - Flood Hazard Profile (draft) provided early February 2016; Coastal Erosion and Climate Change/Sea-Level Rise Profiles now available for review by planning partners and Subject Matter Experts (SMEs)
- Re-Evaluate Mitigation Goals and Objectives – Mitigation Goals Setting Webinar held February 2016
- Update Mitigation Strategy
 - All municipalities have been tasked with identifying progress/disposition of prior (2010) mitigation strategy
 - Projects to be "carried forward" should be in your updated strategy
 - New mitigation actions have been identified during the course of this planning process
 - Your latest annex (provided early February 2016) should document information provided by your municipality to date
- This workshop is designed to help facilitate the development and completion of your updated local mitigation strategy, to meet the Federal, Regional (II) and State requirements under DMA2000, and CRS compliance for those participating in the CRS program.

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NJOEM and FEMA

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Identification and Analysis of Mitigation Actions

- Tetra Tech provided draft annexes in early February, identifying any missing information
- This include a draft updated mitigation strategy based on:
 - Actions being carried forward from 2010 plan
 - Actions identified during data collection, hazard profiling/risk assessment process
 - Actions provided directly by the municipality
- All actions should be realistic, achievable and action-oriented
- New projects will need to be captured on Action Worksheets

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Outreach – Please send copies of announcements, screenshots, sign-in sheets, etc.

- Link to Project Web Page
 - www.capemaycountyhmp.com
 - Provides access to Public and Stakeholder Surveys
- Social Media Blasts
- Local Announcements/Meetings



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Please contact us with questions!

Thank you!

Jonathan Raser, CFM
Paul Miller, CFM
Kristen Gelino, CFM

jonathan.raser@tetrattech.com
paul.miller@tetrattech.com
kristen.gelino@tetrattech.com



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CAPE MAY COUNTY



EMERGENCY MANAGEMENT COMMUNICATIONS CENTER
 30 WEST MECHANIC STREET, CAPE MAY COURT HOUSE, NJ 08210
 {O} 609.463.6570 {F} 609.463.0252 {Email} mpagliughi@co.cape-may.nj.us

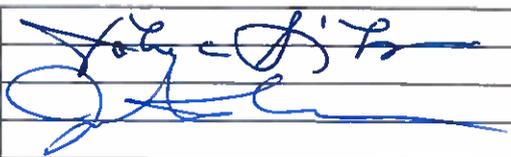
Gerald M. Thornton, Freeholder Martin L. Pagliughi, Director Scott G. Morgan, Deputy

HAZARD MITIGATION PLAN REVIEW

Wednesday, February 17, 2016 @ 10:30 am

ATTENDANCE ROSTER

#	NAME	AGENCY	SIGNATURE
1	Marty Pagliughi	CMC EMCC Director	<i>[Signature]</i>
2	Scott Morgan	CMC EMCC Deputy Director	<i>[Signature]</i>
3	Dan Cuano	NJSP OEM	<i>[Signature]</i>
4	Grant Russ	STONE HARBOR	<i>[Signature]</i>
5	SAI DeScomon	WILDWOOD CREST	<i>[Signature]</i>
6	M. JARGOWSKI	SEA ISLE CITY	<i>[Signature]</i>
7	ED MAHANEY	MAYOR CAPE MAY CITY	<i>[Signature]</i>
8	Edie Kopetz	Tech Asst, CRS, CAPEMAY	<i>[Signature]</i>
9	Jason Dilworth	Cape May	<i>[Signature]</i>
10	Neil Brown	SEA ISLE CITY	<i>[Signature]</i>
11	Rich Harrao	Lower Twp	<i>[Signature]</i>
12	Christesta	NJOEM	<i>[Signature]</i>
13	HOWARD WOLF	FEMA	<i>[Signature]</i>
14	CURIS RIDINGS	WEST WILDWOOD	<i>[Signature]</i>
15	Chris Hutch	JC NERR	<i>[Signature]</i>
16	Benny Favara	F. HAVATO	<i>[Signature]</i>
17	Frank Donato	OC OEM	<i>[Signature]</i>
18	Matt van de Hayden	City of Ocean City	<i>[Signature]</i>
19	Bill Bolterino	NJSP/OEM	<i>[Signature]</i>
20	Ryan Bailey	OC NJOEM	<i>[Signature]</i>
21	Lois Ciabattini	WOODBINE JUNIOR HIGH	<i>[Signature]</i>
22	Eds MacTeucc	NORTH WILDWOOD OEH	<i>[Signature]</i>
23	RONALD SIMONE	NORTH WILDWOOD	<i>[Signature]</i>
24	Paul Dietrich	Upper Twp	<i>[Signature]</i>
25	MIKE JONES	UPPER OEM	<i>[Signature]</i>
26	Irene Scheiner	SMOET EMC	<i>[Signature]</i>
27	ANITA VANHEESWIJK	CMT	<i>[Signature]</i>
28	Greg Basile	West Cape May	<i>[Signature]</i>
29	Steve Boy	Wildwood	<i>[Signature]</i>
30	CHRIS HUNTERS	CAPE MAY	<i>[Signature]</i>
31	Richard Brady	Cap May	<i>[Signature]</i>
32	Joe Piant	IC IC	<i>[Signature]</i>
33	Daniel Durn	WILDWOOD	<i>[Signature]</i>
34	Joseph McGenty	Wildwood Crest	<i>[Signature]</i>
35	Nancy deBrett	Aspen	<i>[Signature]</i>

36	Jack Gibson	Dennis Township	
37	" "	Jersey City	
38	Jonathan Rasor	Terra Tech, Inc.	
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Cape May County HMP – 2016 Update

Enhanced RL/SRL Strategy

March 15, 2016



Today's Agenda

- Understanding the “Enhanced Repetitive Loss/Severe Repetitive Loss Property (RL/SRL) Strategy”
- Municipal Requirements and Expectations
- Property Owner Requirements and Expectations
- Schedule



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Enhanced Repetitive Loss/Severe Repetitive Loss Property (RL/SRL) Strategy

Background:

- FEMA Mitigation Grant Opportunities come around periodically:
 - Annually for PDM and FMA – 2016 just announced
 - In the wake of declared disasters in the state for HMGP
- Recent grant programs have prioritized the mitigation of NFIP Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties, and we can expect that this will continue
- The State has encouraged Counties to develop countywide grant applications for RL/SRL mitigation
- This effort is part of the Countywide HMP Update process, and thus the primary purpose and final deliverable will be an Enhanced Repetitive Loss/Severe Repetitive Loss (RL/SRL) Strategy that will become part of the updated County and municipal strategies in the 2016 Update.

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Enhanced Repetitive Loss/Severe Repetitive Loss Property (RL/SRL) Strategy

- This Enhanced RL/SRL Strategy will include both short-term and long-term implementation elements, to include the submission of countywide mitigation grant applications for elevations and/or acquisitions.
- As the first short-term implementation of this strategy, we would like to be able to support the County in submitting a countywide 2016 FMA application for interested RL/SRL property owners in interested communities.
- This is a significant effort, no matter how limited the scope of the application.

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Enhanced RL/SRL Strategy – Main Project Elements

- Municipal outreach to all RL/SRL property owners
- Informative meetings for interested property owners
- Development of an interested property owner database (elevation and/or acquisition)
- Collection of required property owner data
- Development of a 2016 FMA grant application, initially focused on the acquisition of SRL properties that meet the “no benefit-cost” threshold – simply, the lowest-hanging fruit

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Enhanced RL/SRL Strategy – Near-Term Grant Application Considerations

- All Grant Applications require significant amounts of documentation
- Projects must demonstrate “Cost Effectiveness”, typically through a rigorous FEMA Benefit-Cost Analysis (BCA)
- FEMA has developed some cost thresholds under which elevations and acquisitions may be assumed “Cost Effective” and thus BCA is not required.
- The cost of acquisitions are easier to determine, elevations are more “property-specific”
- Most grants require a local match, however SRL properties under FMA are funded at 100% (RL at 90%)
- Hence, lowest-hanging fruit under 2016 FMA is:
 - SRL
 - Acquisition
 - Meets No BCA Threshold

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Enhanced RL/SRL Strategy – “No-BCA” Thresholds

- Set in a 2013 FEMA Guidance Memorandum at:
 - Elevation \$175,000
 - Acquisition \$276,000
- Can be adjusted using inflation and location multipliers (e.g. RS Means, BNI) – about 1.3 for CMC
- Includes all costs associated with mitigation activity
 - For acquisition – costs other than “Fair Market Value” estimated at \$100,00
 - No-BCA Acquisition “Fair Market Value” Threshold in CMC ~ \$ 260,000

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Enhanced RL/SRL Strategy – Mitigation Activity Costs

Acquisition –

- Pre Construction (Destruction?) Phase”
 - Property Value (Fair Market Value)
 - Appraisal Fee
 - Survey
 - Title Search, Title Insurance
 - Legal Fees
 - Environmental Site Assessment and Asbestos/Lead Survey
 - Permits
- Construction Phase
 - Utility Disconnects and Decommissioning (Electric, UST, Well, Septic)
 - Asbestos Remediation
 - Demolition and Demolition Oversight
- Project Management

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Enhanced RL/SRL Strategy – Municipal Role

- Document interest in participating in this program – via submitting a completed Municipal Letter of Intent to Participate to CMC OEM (template forwarded to your community last week).
- Initiate and support RL/SRL property owner outreach
- Include this project as a new action in your annex to the current Hazard Mitigation Plan Update.
- Provide data and information as requested by the County and their contractor including:
 - Tax assessor data
 - Historic flood loss data
- Maintain the acquired property as open space in perpetuity.
- Provide maintenance letter agreement for the FEMA FMA grant application (template to be provided).

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Enhanced RL/SRL Strategy – FMA RL/SRL Lists by Municipality

We have FEMA's latest list of CMC RL/SRL properties, per the FEMA definitions:

A Severe Repetitive Loss property is a structure that:

- (a) Is covered under a contract for flood insurance made available under the NFIP; and
- (b) Has incurred flood related damage –
 - (i) For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or
 - (ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

A repetitive loss property is a structure covered by a contract for flood insurance made available under the NFIP that:

- (a) Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
- (b) At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

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Enhanced RL/SRL Strategy – Municipal Outreach

Based on the RL/SRL list, municipalities will be required to provide outreach via snail mail to RL/SRL property owners.

For this outreach, TT will provide:

- Announcement Letter, including dates of informational workshops (first two weeks of April)
- Notice of Voluntary Interest (NOVI) form

We recognize that some communities have performed this type of outreach and data collection. We will work with these communities directly so that this program complements any ongoing efforts.

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Enhanced RL/SRL Strategy – Property Owner Role

- Complete and submit Notice of Voluntary Interest (NOVI)
- Provide data and information as requested by the County and their contractor including:
 - Provide proof of NFIP Insurance (critical!)
 - Historic flood loss data
 - NFIP Claims data
 - Other flood benefit data (e.g. mitigation, ICC)
 - Property and structure data, including valuations
 - Any estimates for mitigation (e.g. elevation)

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Enhanced RL/SRL Strategy – Regional Property Owner Workshops

General presentation to include:

- Description and Overview of the program
- What “Voluntary Participation” means
- Completing the Notice of Voluntary Interest (NOVI) form
- How is “Fair Market Value” determined
- Local Match Requirements
- Property Owner Data and Certification Requirements
- Schedule
- Question and Answer Session

After the Q&A, TT will have several representatives available to collect information and answer questions one-on-one

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Schedule

- FEMA 2016 HMA Grant Application Period – March 15-June 15, 2016
- Municipal Letter of Intent to Participate Due – March 31, 2016
- Regional Property Owner Workshops – First two weeks of April
- Data Collection – April 2016
- Grant Application Development – April 1 – May 15, 2016
- Grant Application Due to NJOEM –May 15, 2016 (estimated)
- State Grant Submission Deadline (to FEMA) – June 15, 2016
- FEMA Notice of Award - TBD
- Project Implementation - TBD

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Resources

We will add a new “Enhanced RL/SRL Strategy” page to the 2016 HMP Update public project website at:

<http://www.capemaycountyhmp.com>

- Property Owner Notice of Voluntary Intent
- Project Fact Sheet
- Other grant program information
- Required data and information checklists
 - Elevation
 - Acquisition

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Please contact us with questions!

Jonathan Raser, CFM
jonathan.raser@tetrattech.com
(973) 630-8042

Paul Miller, CFM
paul.miller@tetrattech.com
(973) 630-8344



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CAPE MAY COUNTY



EMERGENCY MANAGEMENT COMMUNICATIONS CENTER

30 WEST MECHANIC STREET, CAPE MAY COURT HOUSE, NJ 08210

{O} 609.463.6570 {F} 609.463.0252 {Email} mpagliughi@co.cape-may.nj.us

Gerald M. Thornton, Freeholder

Martin L. Pagliughi, Director

Scott G. Morgan, Deputy

F.M.A. GRANT PROJECT

Tuesday, March 15, 2016, 2016 @ 1:30 pm

ATTENDANCE ROSTER

#	NAME	AGENCY	SIGNATURE
1	Marty Pagliughi	CMC EMCC Director	<i>Marty Pagliughi</i>
2	Scott Morgan	CMC EMCC Deputy Director	<i>Scott Morgan</i>
3	<i>JIM RUTALA</i>	<i>RUTALA ASSOC. / CAPE MAY</i>	<i>Jim Rutala</i>
4	<i>Ed Belski</i>	<i>EMC West Cape May</i>	<i>Ed Belski</i>
5	<i>ED MAHANBY</i>	<i>CITY OF CAPE MAY</i>	<i>Ed Mahanby</i>
6	<i>Edre Kopsitz</i>	<i>CITY OF CAPE MAY</i>	<i>Edre Kopsitz</i>
7	<i>Bruce MacLeod</i>	<i>CITY OF CAPE MAY</i>	<i>Bruce MacLeod</i>
8	<i>Low Belusco</i>	<i>CITY OF CAPE MAY</i>	<i>Low Belusco</i>
9	<i>Joe Picard</i>	<i>CITY OF CAPE MAY</i>	<i>Joe Picard</i>
10	<i>LEH BENSONO</i>	<i>CITY OF CAPE MAY</i>	<i>Leh Benson</i>
11	<i>Ken Hawk</i>	<i>Stone Harbor OFM</i>	<i>Ken Hawk</i>
12	<i>Chris Ridings</i>	<i>WEST WILDWOOD</i>	<i>Chris Ridings</i>
13	<i>Frank Donato</i>	<i>CITY OF OC. OEM</i>	<i>Frank Donato</i>
14	<i>Mitt van der Hayden</i>	<i>CITY OF DEER CITY</i>	<i>Mitt van der Hayden</i>
15	<i>Bob Mattiace</i>	<i>NO. WILDWOOD</i>	<i>Bob Mattiace</i>
16	<i>SCOTT TRAFORD</i>	<i>TOWNSHIP</i>	<i>Scott Traford</i>
17	<i>JUDY DAVIES</i>	<i>BOROUGH OF J.H.</i>	<i>Judy Davies</i>
18	<i>Gary Playford</i>	<i>LOWER TWP</i>	<i>Gary Playford</i>
19	<i>John Berg</i>	<i>DENNIS TWP.</i>	<i>John Berg</i>
20	<i>CHRIS HULLER</i>	<i>CAPE MAY</i>	<i>Chris Huller</i>
21	<i>Steve Guel</i>	<i>Wildwood</i>	<i>Steve Guel</i>
22	<i>Paul Dietrich</i>	<i>Upper Twp</i>	<i>Paul Dietrich</i>
23	<i>M Jones</i>	<i>Upper Twp</i>	<i>M Jones</i>
24	<i>Low Giebelen</i>	<i>Woodbine</i>	<i>Low Giebelen</i>
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Cape May County Hazard Mitigation Plan – 2016 Update

Enhanced NFIP Repetitive Loss/Severe Repetitive Loss Strategy

April 16, 2016





Today's Agenda

- 2016 Cape May County Hazard Mitigation Plan (HMP) Update Process
- Understanding the “Enhanced Repetitive Loss/Severe Repetitive Loss Property (RL/SRL) Strategy”
- Private Property Owner Mitigation Funding Opportunities
- Potential 2016 FMA Application for Interested Property Owners
- Property Owner Requirements and Expectations
- Schedule



Cape May County Hazard Mitigation Plan (HMP) 2016 Update Process

- Cape May County and all inclusive municipalities are in the regulatory 5-year update process of their Hazard Mitigation Plan (HMP)
- Plans must include County and Local Strategies to “Buy Down” Natural Hazard Risk
- By having an active HMP, the County and participating jurisdictions are eligible for FEMA hazard mitigation funding to support identified mitigation strategies through the following programs:
 - PDM and FMA – Annual program, 2016 cycle opened March 15
 - HMGP - In the wake of declared disasters, such as Sandy
- The mitigation of NFIP Repetitive Loss and Severe Repetitive Loss properties is a national priority, and the 2016 Congressional funding for hazard mitigation clearly reflects these priorities.
- The State (New Jersey Office of Emergency Management) has encouraged the County to:
 - Incorporate this priority within the County HMP update process.
 - Leverage opportunities to develop Countywide grant applications for the mitigation of RL/SRL properties.
- In response, we have augmented our Countywide HMP Update process to include an “Enhanced RL/SRL Initiative”



Enhanced Repetitive Loss/Severe Repetitive Loss Property (RL/SRL) Strategy

- This effort is primarily focused on municipal outreach to RL/SRL property owners to understand interest in mitigation and develop an actionable strategy to support private property mitigation through the leveraging of available funding mechanisms.
- This Enhanced RL/SRL Strategy will include both short-term and long-term implementation elements, to include the submission of countywide mitigation grant applications for elevations and/or acquisitions.
- As the first short-term implementation of this strategy, we would like to be able to support the County in submitting a countywide 2016 FMA application for interested RL/SRL property owners in interested communities.



Enhanced RL/SRL Strategy – Main Project Elements

- Municipal outreach to all RL/SRL property owners
- Informative meetings for interested property owners (this meeting!)
- Collection of required property owner data
- Development of an interested property owner database (elevation and/or acquisition)
- Development of near-term and long-term approaches to leverage available Federal and State programs and funding to support private property mitigation
- Possible development of a 2016 FMA grant application(s), intended to:
 - Best meets current funding priorities = Best Chance of Winning in the Competitive Arena
 - Can be effectively developed in the very limited time available



Enhanced RL/SRL Strategy – Near-Term Grant Application Considerations

- Projects much demonstrate “Cost Effectiveness”, typically through a rigorous FEMA Benefit-Cost Analysis (BCA)
- FEMA has developed some cost thresholds under which elevations and acquisitions may be assumed “Cost Effective” and thus BCA is not required.
- Most grants require a local match, however under FMA the Federal share is:
 - SRL = 100%
 - RL = 90%
- Acquisitions require a long-term level of municipal consent that has not yet been established.
- Hence, lowest-hanging fruit for a possible 2016 FMA grant application is:
 - Elevations
 - NFIP SRL and RL properties, in that order
 - Meets “No-BCA” Threshold (aggregated)



What is an NFIP RL or SRL Property under the Flood Mitigation Assistance (FMA) Grant Program?

A Severe Repetitive Loss (SRL) property is a structure that:

- (a) Is covered under a contract for flood insurance made available under the NFIP; and
- (b) Has incurred flood related damage –
 - (i) For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; **(Priority 3 - 2016 FMA)**
 - (ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure. **(Priority 1- 2016 FMA)**

A Repetitive Loss (RL) property is a structure covered by a contract for flood insurance made available under the NFIP that:

- (a) Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
- (b) At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage. **(Priority 2 - 2016 FMA)**

We have FEMA's latest list of CMC RL/SRL properties, which has been used by municipalities participating in this initiative for outreach.



“No-BCA” Thresholds

- Set in a 2013 FEMA Guidance Memorandum for elevations (total project cost) at \$175,000.
- This translates to about \$160,000 for an elevation from the property owner perspective.
- If a Countywide 2016 FMA application for elevations is developed, it will be limited to a group of properties that meet the “no-BCA” threshold as an aggregate.
- All willing properties within this threshold will be included. We will work to include as many willing properties exceeding the threshold as possible, but clearly that will start with those most closely to the threshold.



The Hard Facts

- This is a reimbursement program, thus property owners will be responsible for covering costs and then applying for reimbursement once the project is completed.
- The County is currently working with several local lending institutions that may be able to provide “bridge loans” for mitigation projects.
- RL property owners will be responsible for the 10% “local share” of their mitigation project.
- **Properties mitigated using Federal mitigation grant funding are required to maintain NFIP flood insurance on the property in perpetuity. This flood insurance requirement becomes part of the property deed.**



Property Owner Requirements - Needed Information and Documents

- Mandatory - Notice of Voluntary Interest (NOVI) – without this we will not accept any other information for your property – MUST BE SIGNED
- Proof of NFIP Insurance (critical!)
- FEMA Declaration and Release Form – MUST BE SIGNED
- NFIP Elevation Certificate (as available)
- Four pictures of property (taken from each side)
- Elevation estimates from contractors (as available)
- Other flood benefit data (e.g. prior mitigation, ICC)
- Property and structure data, including valuations



Property Owner Requirements - Needed Information and Documents

- We will maintain an property owner information tracker on the “Enhanced RL/SRL Initiative” page of:

www.capemaycountyhmp.com

- To maintain your privacy, your property shall be identified by a Username of your choice.
- Please provide a personal username (max. of 12 characters) on your NOVI.

Property Owner Notice of Voluntary Interest (NOVI)

Notice of Voluntary Interest - FEMA Flood Mitigation Assistance (FMA) Program

Please mail, fax or email your completed agreement with signature to:

*Martin L. Pagliughi, Director Cape May County Office of Emergency Management
30 West Mechanic Street, Cape May Court House, NJ 08210
martin.pagliughi@co.cape-may.nj.us Fax: 609-463-0252*

I am interested in (circle as appropriate): Elevation Acquisition

Property Owner: _____

(Co-Owner's Full Name): _____

Phone #: () _____ Work #: () _____ Cell #: () _____

Property Address: _____

Mailing Address: (If different)

E-Mail: _____

PROPERTY INFORMATION Body of Water Causing Flooding: _____

Do you currently have Flood Insurance? Yes No

Insurance Company: _____ Policy #: _____

Please circle the appropriate answers below:

Is your property in foreclosure? Y N If yes, please indicate mortgage lender: _____

Have you filed claims in last 10 years? Y N ICC? Y N Is home substantially damaged? Y N

**Put your personal
username here!**

Property Owner Notice of Voluntary Interest (NOVI)

<u>Property:</u>	<u>Type Home:</u>	<u>Foundation Type:</u>	<u>Type Structure:</u>
Owner Occupied-Primary Owner Occupied- Secondary Rental Vacant Lot Other (Explain) _____	Single Family 2-4 Family Multi (5+) Manufactured Vacant Land Other (Explain) _____	<u>Basement</u> Y N If yes, Finished Y N or Partial Y N <u>Crawl Space</u> Y N Elevated on piers/columns/posts/piles Slab on Grade Vacant Land Basement Outside Entrance Y N Other (Explain)_____	Wood Masonry (Brick) Stone Cement Other _____

If rented now, please provide name, address, and phone number of renter (use extra pages as needed)

TAX Parcel #: _____ Do you have an NFIP Elevation Certificate? Y N

Date of Construction: _____ # Stories above ground: _____ Total Living Area in Sq Ft. (All floors): _____

Estimate the Fair Market Value of your home (land and improvements): \$ _____

The local government is required by FEMA to inform you that your participation in this project for structural elevation or open-space acquisition is voluntary. Neither the State nor the Local Government will use its eminent domain authority to acquire the property for open-space purposes if you choose not to participate in a Hazard Mitigation Assistance grant program, or if negotiations fail.

Print Name(s) of Property Owner(s) _____

Signature: _____ Date: _____

Co-Owner's Signature (if applicable) _____ Date: _____





Elevation – How High Must I Go?

New Jersey requires, at a minimum, that structures be elevated to the current regulatory NFIP Base Flood Elevation (BFE) plus one foot (BFE+1). However, NFIP mapping in the region is currently in an active update process after Sandy, and Preliminary FIRM maps (Revised 1/30/2015) are available and should be used as the “Best Available Data”.

The Cape May communities of Cape May City, Cape May Point, North Wildwood, City of Wildwood and Sea Isle City require BFE+2.

Preliminary FIRM Maps are available at:

- Your municipal building – Building Department
- www.region2coastal.com

Elevation – How High Can I Go?

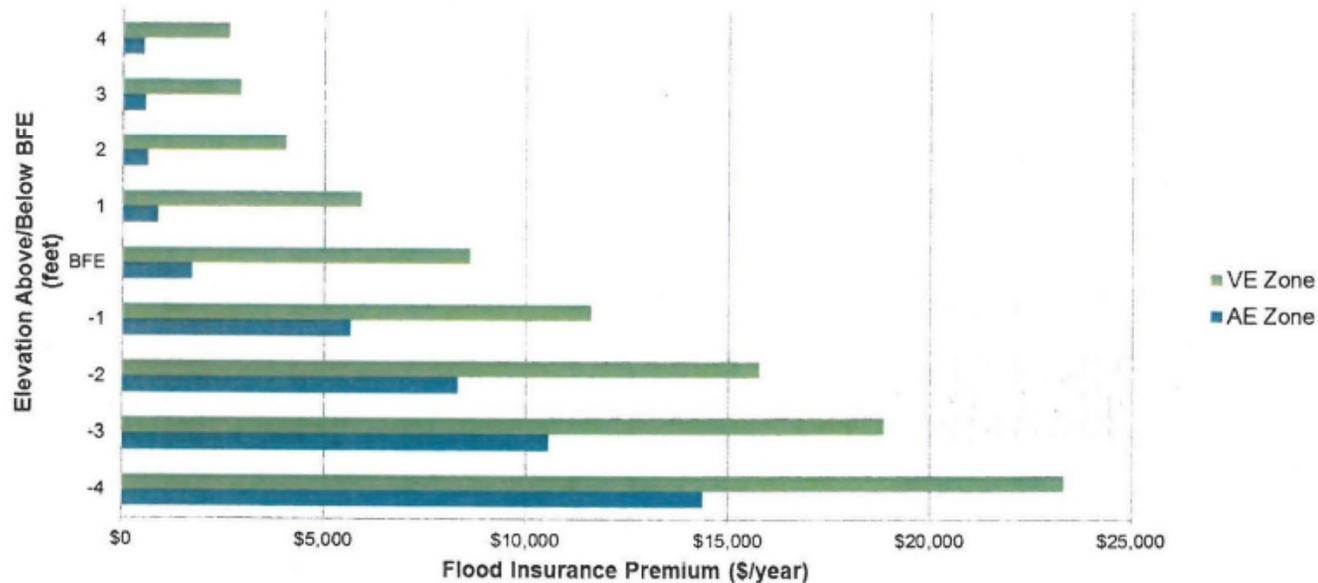
Local zoning requirements apply. Typical elevation concerns with respect to local zoning involve setbacks (for modifications required for access – stairs, ramps) and total building heights. You will need to work with your local communities to understand zoning restrictions that may apply to your situation, and consider any variances that may be needed as available.

Elevation – How High Should I Go?

The cost of additional elevation above the required minimum is incremental, but it can provide substantial long-term savings. A FEMA mitigation grant will only cover to the local regulatory level (BFE+1 or +2), but the property owner can pay the additional costs.

Cost of Flood Insurance at Various Elevations

Annual Flood Insurance Cost Based on Elevation Above/Below BFE at Maximum Coverage





Elevation – What Goes into an Elevation?

- Removing existing decks, porches, walkways, steps, and stair cases
- Removing pavers and other hardscape and storing them carefully for later reuse
- Temporarily removing any landscaping
- Engineering, architectural drawings, soil samples, and site surveys
- Foundational work – either concrete foundations, pilings, or helical piles
- Shutting off your utilities, including sending official shutoff request to your municipality
- Disconnecting utilities – electricity, plumbing, heating, air conditioning, ventilation
- Lifting or Raising the House
- Building a new foundation
- Constructing a new lower level
- Installing hurricane straps and bracing where necessary
- Painting, siding, and coating
- Re-installing or rebuilding decks, porches, and stairs
- Re-installing landscaping and hardscape
- Re-connecting all utilities and raising your HVAC equipment off the ground



Working with Elevation Contractors

- Interested property owners are encouraged at this time to get an elevation estimate from a New Jersey licensed home elevation contractor
- Licensed home elevation specialists and professionals can be found by visiting the State of New Jersey Division of Consumer Affairs website at www.njconsumeraffairs.gov
- Download [Hiring a Home Elevation Contractor](#) from the NJ Division of Consumer Affairs
- Further information may be found at: www.RebuildNewJersey.com



Acquisition – General FAQs

- From the perspective of the property owner, an acquisition is the federal government purchasing your property at “Fair Market Value”.
- “Fair Market Value” is the undamaged value of your property (land and improvements), but otherwise considers all other aspects of your property in your local real estate environment, including your flood vulnerability.
- You have the right to obtain and present your own appraisals, which may or may not be taken into consideration on final price.
- Ultimately, this is a voluntary program, and you do not have to accept their offer.
- Municipalities must also be willing partners in an acquisition, as they will assume the property as open space with eternal maintenance and liability issues. At this time, there are no municipalities who are actively willing to accept open-space acquisitions.



Schedule

- FEMA 2016 HMA Grant Application Period – March 15-June 15, 2016
- Regional Property Owner Workshops – First two weeks of April
- Data Collection – April 2016
- Grant Application Development – April 1 – May 15, 2016
- Grant Application Due to NJOEM –May 15, 2016 (estimated)
- State Grant Submission Deadline (to FEMA) – June 15, 2016
- FEMA Notice of Award - TBD
- Project Implementation - TBD



Resources

We have added an “Enhanced RL/SRL Strategy” page to the 2016 HMP Update public project website at:

www.capemaycountyhmp.com

Base Flood Elevation (BFE) Mapper and a wealth of relevant information:

www.region2coastal.com

Information on Elevations and Contractors (private site):

www.RebuildNewJersey.com

Your municipality is one of your best resources...they are critical in the mitigation process, so work with them from the start.

Jonathan Raser, CFM
jonathan.raser@tetrattech.com
(973) 630-8042

Assistance (FMA) - Workshop 4/9/2016
 Address Phone

Flood Mitigation Assistance (FMA) - Workshop 4/9/2016			
Name	Address	Phone	Email
Fred Musco	47 Falcon Dr <small>Local Property: 811 Pass York Ave N. Wildwood, NJ 08240</small> Southampton, NJ 08088 <small>Unit D 08240</small>	267 444-9003	Fdmusco@aol.com
W. Dorado Sparks	8307 Summit Dr. <small>Stone Harbor 08247</small>	610 361-3443	dsparks@ECKERLSPARKS.com
Katharine M. Curtiss	Property Address 281 90th St, Stone Harbor 08247	914 523 3765	katharine.curtiss@gmail.com
Ronald Sheridan	333 44th Street Sea Isle City NJ 08243	484-888-5257	dywfootball@yahoo.com
DOMINIC FEDELE	210 W PINE AVE NORTH WILDWOOD NJ 08260	215 680-5135	dfedele@aol.com
Lrida H. Coady	property address 1031 Bay Ave. OCNJ	215-836-2787 609-399-1447	lridacoady43@ verizon.net
TOM ALLINGHAM	382 92nd Street Stone Harbor NJ 08247	302-998-7654 609-368-0550	thomas.allingham @skadden.com
Anthony Guerin	1 E 10th ST Ocean City NJ 08225	609 553-0277	Sporty4u2000@ AOL.com
Mike Alberico	327 44th Street Sea Isle City, NJ 08243	609-579-0159	malbe00@gmail.com
NEK BIRN E	379 43rd PLACE SEA ISLE CITY	609 602 9002	NBIRNE@SEAISLECI.TX.US
Mary Darnis	300 Bay Ave OC, NJ	609 225-2562	ocfishingcenter@ gmail.com

Assistance (FMA) - Workshop 4/9/16
 Address

Flood Mitigation Assistance (FMA) - Workshop 4/9/2016

Name	Address	Phone	Email
Nicole Lambert Salvati	20 Walton Place Ocean City, NJ	609-953-4708 609-313-6428	hnsalvati@msn.com
Jeanne Ketchum	853 1st St. Ocean NJ	610-517-6955	jeannie.heas@yahoo.com
Mark Forbes	5201 Plunk's Ave Sea Isle City NJ	302-510-1176	ttforbes@aol.com
Peter J. DeLuca Jr	4608 ASBURY AVE Ocean City NJ	215-384-6947	PeterDJr20@aol.com
Gregory Johnson	7th Simpson Ave	609-442-4997	morrisvedia@yahoo.com
EDWARD SUZENDER	5 BINDA RD OCEAN CITY NJ	609-315-8867	ERIC777@AOL.COM
Michael Monicelli	213 43rd St. Sea Isle City	609-263-9559	BARBAR17@AOL.COM



CAPE MAY COUNTY ENHANCED RL/SRL INITIATIVE
SIGN-IN SHEET
MEETING DATE: April 16, 2016



Name	Property Address	Phone Number	E-mail
Joseph ward	365 92nd St Stone Harbor NJ 08247	215-962-3335	sleepward@comcast.net
Victoria Malaszeski	4609 Mediterranean Ave Wildwood NJ	609-447-2573	Victoria.Malaszeski@ lobrimited.com
RITA SEAMAN	N. Wildwood 512 W. SPRUCE	215-605-2921	rmsonspruce@aol.com
Karl Byfonte	1003 New Jersey N.W	609-729-2286	KBelFonte@Hotmail.com
JOHN O'LEARY	318 W. WALNUT ST N.W. N.J.	609-617-7883	JOLEARYNP@comcast.net
Robert Schmacher	335 W 18th Ave 1403 Hoffman Canal	609 972 7630	L. Steu L. Schuber@ Comcast.net
Robert White Kettle	307 West Maple Wildwood NJ	609 315-0901	Kettle 316 Q AOL.COM
Kathy Gonzalez	206 W 1st. Ave North Wildwood, NJ	609-602 9437	KGONZALEZ9192@gmail. com



CAPE MAY COUNTY ENHANCED RL/SRL INITIATIVE
SIGN-IN SHEET
MEETING DATE: April 16, 2016



Name	Property Address	Phone Number	E-mail
John McManus	2403 Delaware Ave	215 669-1101	John McManus @ affordablewaterproofingllc.com
JOE WEIR	WEST WILDWOOD NJ 715 W Maple Ave	302-478-0988	JOE WEIR @ AWTMAIL.COM



CAPE MAY COUNTY ENHANCED RL/SRL INITIATIVE
SIGN-IN SHEET
MEETING DATE: April 16, 2016



Name	Property Address	Phone Number	E-mail
JOE KOLOB	424 W BURK	609 522-5350	JOE.KOLOB@JUNO.COM
RYAN METZGER	2414 N 3 AVE N. WILDWOOD	609 408-7520	J.METZ@COMCAST.NET
TIM HEUSER	127 W. 4TH AVE	609-381-7892	DIGITALJEN@AOL.COM
KEVIN CASEY	301 New York Ave	215-665-0375	KCASEY228@GMAIL.COM
MICHAEL + NICOLE POLLEY	4602 Central Ave. Sea Isle City	610-597-8050	mpulley@verizon.net
RON SIMONE	City of North Wildwood	609-600-7766	RSIMONE@NORTHWILDWOOD.COM
LORRAINE NICHOLAS	405 NEW YORK AVE N. WILDWOOD	609-536-2590	LORRAINE.NICHOLAS@YAHOO.COM



CAPE MAY COUNTY ENHANCED RL/SRL INITIATIVE
SIGN-IN SHEET
MEETING DATE: April 16, 2016



Name	Property Address	Phone Number	E-mail
Janice + Joseph Ross	419 W. Pine Ave	267-265-4523	j08354@comcast.net
Norm Marge & Parks	Stone Harbor		
Carol Bonney	379 96 th St	609-425-8028	MargeNorm@Comcast.net
John & T Ingram	910 New York Ave.	215-805-1844	JohnIngram@yaho.com
Tom + Sadice	227 W 17 th Ave	215-468-4951	Tom - Sadice 2007
me-caffery	N.W.W		@kenwood.net
JOHN REED	208 E 16TH AVE	910-581-0262	John.m.reed@gmail.com
Barbara Sparrow	4605 Mediterranean Ave	609-522-2393	Barbara@edlimited.com
Alan Zimmerman	112 West 9 th St		
ARISTOUS & KATHLEEN	North Wildwood, NJ	856-905-9572	Suealaw2@hotmail.com
TSALKIRIS	2401 DELAWARE AVE N.J. NORTH WILWOOD	609-729-7713	Sbstskiris@yahoo.com



CAPE MAY COUNTY ENHANCED RL/SRL INITIATIVE
SIGN-IN SHEET
MEETING DATE: April 16, 2016



Name	Property Address	Phone Number	E-mail
Eileen + JOSIAH WALTER	205 W 3RD AVE North Wildwood	609-320-4677	eiken-walter@campbell5oup.com
ROBERT KUBISIEWICZ	4601-4603 MEDITERRANEAN AVE	215-389-8723	BOBROSWOOD1@aol.com
Elizabeth R. Hill	120 E. 13TH AVE N. WILDWOOD, N.J. 08260	215-327-2698	LizzyMcGovee@aol.com
Robert Volker	4302 Central Ave Sea Isle City, NJ	609-432-3925	RVolker1934@yahoo.com
Jean Weigelt - Groot	138 E Kings - Wildwood	609-408-6566	wwjoanw@hotmail.com
David Bridgens	611 Simpson Ave Ocean City 08226	609-214-4039	redskythebeach@aol.com
Bonnie Duke	127 W 10th St North Wildwood NJ	484-437-2956	bmduck1491@verizon.net
HARRY + ROSELEN FOY	309 W. CHESTNUT AVE NW. 08260	267-784-4164	ROSELEN704@gmail.com



CAPE MAY COUNTY ENHANCED RL/SRL INITIATIVE
SIGN-IN SHEET
MEETING DATE: April 16, 2016



Name	Property Address	Phone Number	E-mail
Jean Tremblay	9718 Third Ave Shoaktetown	6102132266	jeantrem@me.com



APPENDIX C PARTICIPATION MATRIX

A matrix is presented to give a broad overview of who attended meetings and when input was provided to the HMP update. All participants were encouraged to attend the Kick-off Meeting and Jurisdictional Annex Workshop. During the planning process the consultant contacted each participant to offer support, explain the process, and to facilitate the submittal and review of critical documents.

The participating jurisdictions agreed to abide by the Planning Partner Expectations and Planning Committee Guidelines which established a Steering Committee which would provide the core of the working group. The Authorization and Letter of Intent to Participate from each municipality is also included in this appendix.

Participation is defined as having input to the hazard analysis (providing historic hazard event/loss data, vulnerability data), and as having participated in the annex workshop or alternate annex meetings as described above for the purpose of creating a mitigation strategy to be included in each municipalities annex in Section 9 of the HMP.



Name	Title / Position	Attended Meeting(s)	Completed Information Gathering Worksheets / Surveys	Provided Data and Information	Reviewed/Updated Inventories (e.g. Critical Facilities)	Identified vulnerabilities	Identified progress on original Mitigation Strategy	Supported update of Mitigation Strategy	Facilitated/Supported public and stakeholder outreach	Supported Integration/Coordination with other Planning Mechanisms	Reviewed/Approved Draft and Final Plan Sections	Designated Project Point of Contact
Cape May County												
Dale Foster	County Engineer	X	X	X	X	X	X	X		X	X	X
Scott Morgan	Deputy Director OEM	X	X	X	X	X	X	X	X	X	X	X
Marty Pagliughi	Director Cape May County EMCC	X	X	X		X	X	X	X	X	X	X
Leslie L. Gimeno, PP, AICP, MPA	Planning Director	X	X	X		X	X	X		X	X	X
Katelynn Wintz	CMC Planning	X	X	X								
Brian O'Conner	GIS Specialist	X		X	X	X				X		
Avalon Borough												
Harry DeButts	Emergency Manager	X	X	X		X	X	X	X	X	X	X
Richard Edward Dean, Sr.	Fire Chief, Fire Official, Fire Subcode Official, OEM Coordinator, Safety Coordinator	X	X	X	X	X	X	X	X	X	X	X
John Tracy	Construction Official/NFIP FPA		X		X	X	X	X		X	X	
Paul E. Short, Sr.	Code Enforcement Official		X	X			X	X				
Kevin Scarpa, MICP	Avalon Rescue Squad - Chief			X		X	X	X				
Mr. Mainberger	Update on project			X		X	X	X				
Ken Koches	Middlesex Water Company - Update on project			X		X	X	X				
Bill Macomber	Public Works Directors			X		X	X	X				X
Sal DeSimone	CRS Coordinator		X	X		X	X	X	X	X	X	
Thomas Thornton	Engineer - Hatch Mott	X	X	X	X	X	X	X		X	X	
Scott Wahl	Mayor, Administrator			X					X		X	
Jeffrey P. Hesley	Land Use Planner						X	X		X	X	
James Craft	CFO			X							X	
Jeff Christopher	Police Captain			X							X	
City of Cape May												
Dr. Edward J. Mahaney, Jr.	Mayor	X	X	X	X	X	X	X	X	X	X	X
Bruce A. MacLeod	City Manager	X		X				X	X	X	X	X
Jason Dilworth, CFM	Building Subcode Official, NFIP FPA	X	X	X	X	X	X	X	X	X	X	
Joe Picard	Public Works Superintendent; Deputy OEM Coordinator	X	X	X		X	X	X			X	
Louise Cummiskey	City Clerk	X	X	X								





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Edie Kopsitz	CRS Coordinator; Technical Assistant Construction Office; Historic Preservation Commission Assistant	X	X	X	X	X	X	X	X	X	X	
Dan Shustack	Purchasing Agent; IT Manager	X		X				X				
Richard Lundholm	OEM Coordinator; Deputy Fire Chief	X						X			X	
Craig Hurlless, PE, PP	City Special Projects Engineer/Land Use Planner	X	X	X		X	X	X		X	X	
Terri Swain	Deputy Mayor / Council Member										X	
Louis Belasco	Tax Assessor			X	X						X	
Borough of Cape May Point												
Robert Moffatt	Mayor									X	X	
Anita vanHeeswyk	Deputy Mayor/Commissioner Revenue & Finance; CRS Coordinator	X	X	X	X	X	X	X	X	X	X	X
John McGraw	Zoning Official			X		X	X	X			X	X
Sal DeSimone	NFIP FPA; CRS Consultant		X	X		X	X	X		X	X	
Irene Schreiner	OEM Coordinator	X		X			X	X			X	
Robert Mullock	Commissioner of Public Works	X		X		X	X	X			X	
Bruce Graham	Engineer			X		X	X	X			X	
Robert Sheehan	Police Chief			X			X	X			X	
William Gibson	Fire Department President			X			X	X			X	
Dennis Township												
John Berg	OEM Coordinator	X	X	X	X	X	X	X	X	X	X	X
Jack Gibson, PE	Engineer	X	X	X			X	X			X	X
William R. Callahan	Construction Official; NFIP FPA		X	X	X	X	X	X		X	X	
Andy Previtti	Planning Board Engineer		X	X	X			X		X		
John Murphy	Mayor			X							X	
Glenn Clarke, CMFO	CFO				X						X	
Vernon Champion	Assistant DPW Director			X		X	X	X			X	
Lower Township												
Gary Douglass, CPWM	Public Works Superintendent; OEM Coordinator	X	X	X		X	X	X				X
Eileen Kreis	Deputy Coordinator/Managers Office	X	X	X		X	X	X	X			X
Gary Playford	Construction Official; NFIP FPA	X	X	X	X	X	X	X		X	X	
Jennifer Dowe	Tax Assessor	X		X	X							





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Katie DelVecchio			X	X		X	X	X				
Richard Herron	OEM Coordinator	X	X	X		X	X	X		X	X	
James Ridgeway	Mayor			X						X	X	
Lauren Read	CFO			X	X						X	
William Galestok	Planning Director		X	X			X	X		X	X	
William Mastriana	Police Chief			X				X			X	
Donna Blackley	Fire Official			X				X			X	
Middle Township												
Sean Mc Devitt	OEM Coordinator	X	X	X	X	X	X	X	X	X	X	X
Sal DeSimone	Construction Official, NFIP FPA, CEM	X	X	X		X	X	X	X	X	X	
Constance Mahon	Mayor, Administrator			X			X	X			X	
Marc DeBlasio	Engineer, Land Use Planner			X			X	X		X	X	
John Clifford	CFO			X			X	X			X	
Robert	Public Works Superintendent			X			X	X			X	
Chris Leusner	Police Chief			X			X	X			X	
City of North Wildwood												
Robert Matteucci	Municipal OEM Coordinator	X	X	X	X	X	X	X	X	X	X	X
Ronald Simone	Administrative Assistant	X	X	X	X	X	X	X	X	X	X	X
Ralph Petrella	City Engineer; NFIP FPA; CRS Coordinator	X	X	X		X	X	X	X	X	X	
Gary Sloan	Director of Public Works	X	X	X	X	X	X	X			X	
Patrick Malia	Construction Official	X	X	X		X	X	X		X	X	
Patrick Rosenello	Mayor								X		X	
Todd Burkey, CFO	CFO				X						X	
Larry Booy	Planning/Zoning		X	X				X		X	X	
Matthew Gallagher	Police Chief										X	
Jeff Cole	Fire Chief										X	
Ocean City												
Frank Donato III	CFO & OEM Coordinator	X	X	X	X	X	X	X	X	X	X	X
Matt von der Hayden	Manager of Capital Planning	X	X	X	X	X	X	X	X	X	X	X
Patrick W. Newton, Jr.	Construction Official; NFIP FPA		X	X		X	X	X		X	X	





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Benny R. Tafoya, CFM	GIS Specialist	X	X	X	X	X	X	X		X		
Arthur J. Chew	Engineer; CRS Support		X	X		X	X	X				
Roger D. McLarnon	Engineer			X			X	X				
Randall Scheule	Planner			X			X	X		X	X	
Joe Berenato	Acting Public Works Director										X	
Chad Callahan	Police Chief										X	
Christopher Breunig	Fire Chief										X	
Sea Isle City												
Cornelius (Neil) R. Byrne, CFM	Construction Official, Building Inspector & Zoning Officer; CRS Coordinator	X	X	X	X	X	X	X	X	X	X	X
Michael Jargowsky	Deputy OEM Coordinator	X	X	X		X	X	X			X	X
Gail L. Snyder	Const'r Office Technical Assistant		X	X					X	X		
George Savastano	Administrator	X	X	X		X	X	X	X		X	
Borough of Stone Harbor												
Jill Gougher	Borough Administrator; CRS Coordinator	X	X	X	X	X	X	X	X	X	X	X
Al Carusi	Public Safety Councilman	X	X	X								
Mike Koochembere	Construction Official; NFIP FPA		X	X		X	X	X		X	X	
Grant Russ	Public Works Director	X	X	X	X	X	X	X			X	
Roger Stanford	Fire Chief; Deputy Emergency Management Coordinator	X						X				
Ken Hawk	OEM	X		X				X			X	
Judy Davies	Council Member	X										
Marc DeBlasio	Engineer							X			X	
James Craft	CFO							X			X	
Paul Reynolds	Police Chief							X			X	
Roger Stanford	Fire Chief							X			X	X
Upper Township												
Paul Dietrich	Municipal Engineer; NFIP FPA; CRS Coordinator	X	X	X	X	X	X	X	X	X	X	X
Scott Morgan	Emergency Management Coordinator	X	X	X	X	X	X	X	X		X	X
Mike Jones	Emergency Management Coordinator	X										
Ed Kenney	Construction Official		X	X		X	X	X			X	



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Shelley Lea	Land Use Planner		X	X		X	X	X		X	X	
Jeff Pierson	Police and Fire			X			X	X			X	
Borough of West Cape May												
Ed Belski	Emergency Management Deputy Coordinator	X	X	X	X	X	X	X	X	X	X	X
Elaine Wallace	Clerk		X						X			X
Don Arndt	Construction Official (from Lower Township)	X	X	X	X	X	X	X			X	
Greg Basile	Public Works Manager	X	X	X	X	X	X	X			X	
Pamela Kaithern	Mayor			X							X	
Borough of West Wildwood												
Francis Pellegrino	Director of Emergency Management				X	X	X	X			X	X
Christopher Ridings, CPM	Borough Administrator; Deputy OEM Coordinator	X	X	X	X	X	X	X	X	X	X	X
Ray Poudrier	Construction Official; NFIP FPA	X	X	X		X	X	X		X	X	
Jackie Ferentz	Police Chief			X							X	
William Null	DPW			X		X	X	X			X	
Elaine Crowley	CFO			X							X	
City of Wildwood												
Daniel Dunn	Municipal Emergency Management Coordinator	X	X	X	X	X	X	X	X	X		X
Steve Booy	Zoning Officer/Floodplain Administrator	X	X	X	X	X	X	X	X	X	X	X
Ernest Troiano, Jr.	Mayor			X								
Christopher Fox	Administrator			X					X	X	X	
Marc DeBlasio	Engineer		X	X		X	X	X			X	
Jeanette Powers, CFO	CFO			X	X						X	
Raymond Poudrier	Building Code Official		X	X		X	X	X		X	X	
Mark D'Amico	Public Works		X	X		X	X	X			X	
Christopher D'Amico	Fire Chief			X							X	
Borough of Wildwood Crest												
Joseph McGrath	Police Chief	X	X	X	X	X	X	X	X	X	X	X
Daniel Dunn	Fire Prevention and Inspection	X	X	X		X	X	X				
Eugene Taylor	Director of Public Safety	X	X	X		X	X	X				X
Sal DeSimone	CRS Coordinator	X		X								





Name	Title / Position	Attended Meeting(s)	Completed Information Gathering Worksheets / Surveys	Provided Data and Information	Reviewed/Updated Inventories (e.g. Critical Facilities)	Identified vulnerabilities	Identified progress on original Mitigation Strategy	Supported update of Mitigation Strategy	Facilitated/Supported public and stakeholder outreach	Supported Integration/Coordination with other Planning Mechanisms	Reviewed/Approved Draft and Final Plan Sections	Designated Project Point of Contact
Ed Grant	Administrator	X		X					X			
Patrick Malia	Construction Official; Zoning Officer; CRS, NFIP FPA	X	X	X		X	X	X	X	X	X	
Carl Groon	Mayor/Administrator			X			X	X			X	
Jim Verna	Engineer			X			X	X			X	
Joseph Bond	Public Works Director			X			X	X			X	
Alicia Belansen	CFO			X			X	X			X	
Jim Grauel	Code Enforcement Official											
Ron Harwood	Fire Department			X			X	X			X	
Borough of Woodbine												
William Pikolycky	Mayor			X			X	X			X	X
Jeff Doran	Emergency Management		X	X	X	X	X	X	X	X		X
Bruce Graham	Engineering/Zoning			X		X	X	X		X	X	
Jim Gurdgiel	Director of Public Works	X		X		X	X	X			X	
John Miller	CFO			X			X	X			X	
Manuel Gonzalez	Fire Chief			X			X	X			X	



APPENDIX D PUBLIC OUTREACH

This appendix provides documentation of public and stakeholder outreach. Public and stakeholder involvement in this planning process has been broad and productive as discussed in Section 3 (Planning Process). Public and stakeholder input received was provided to the County and all municipalities for their consideration. As a result input was incorporated throughout this HMP, as well as within specific mitigation initiatives identified in Volume II, Section 9.



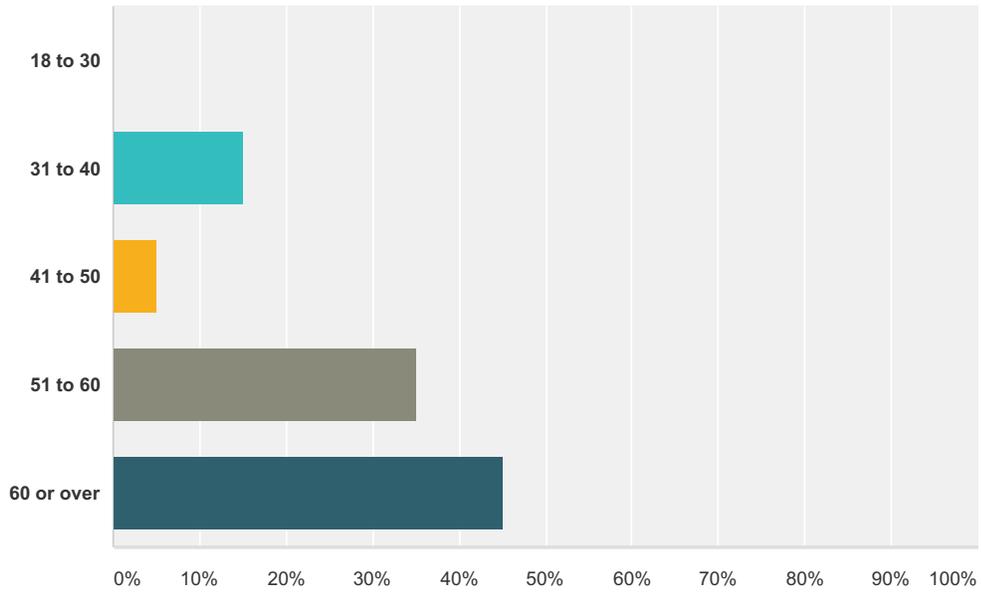
Screenshot of the Cape May County Hazard Mitigation Plan Website with Plan Information

The screenshot shows a web browser window with the URL www.capemaycountyhmp.com/Pages/default.aspx. The page features the Cape May County Hazard Mitigation Plan logo and a search bar. A navigation menu on the left includes links for Home, About the Project, What is Hazard Mitigation, Announcements, Calendar of Events, Meeting Minutes, Draft Documents for Review, Links, and Enhanced RL and SRL Initiative. The main content area is titled "Home" and contains a welcome message, a project goal statement, and a survey invitation. A list of stakeholder surveys is provided, including Academia, Law Enforcement, Firefighter, EMS, Utility, Hospital and Healthcare, and Business/Commerce surveys.



Q1 Please indicate your age range:

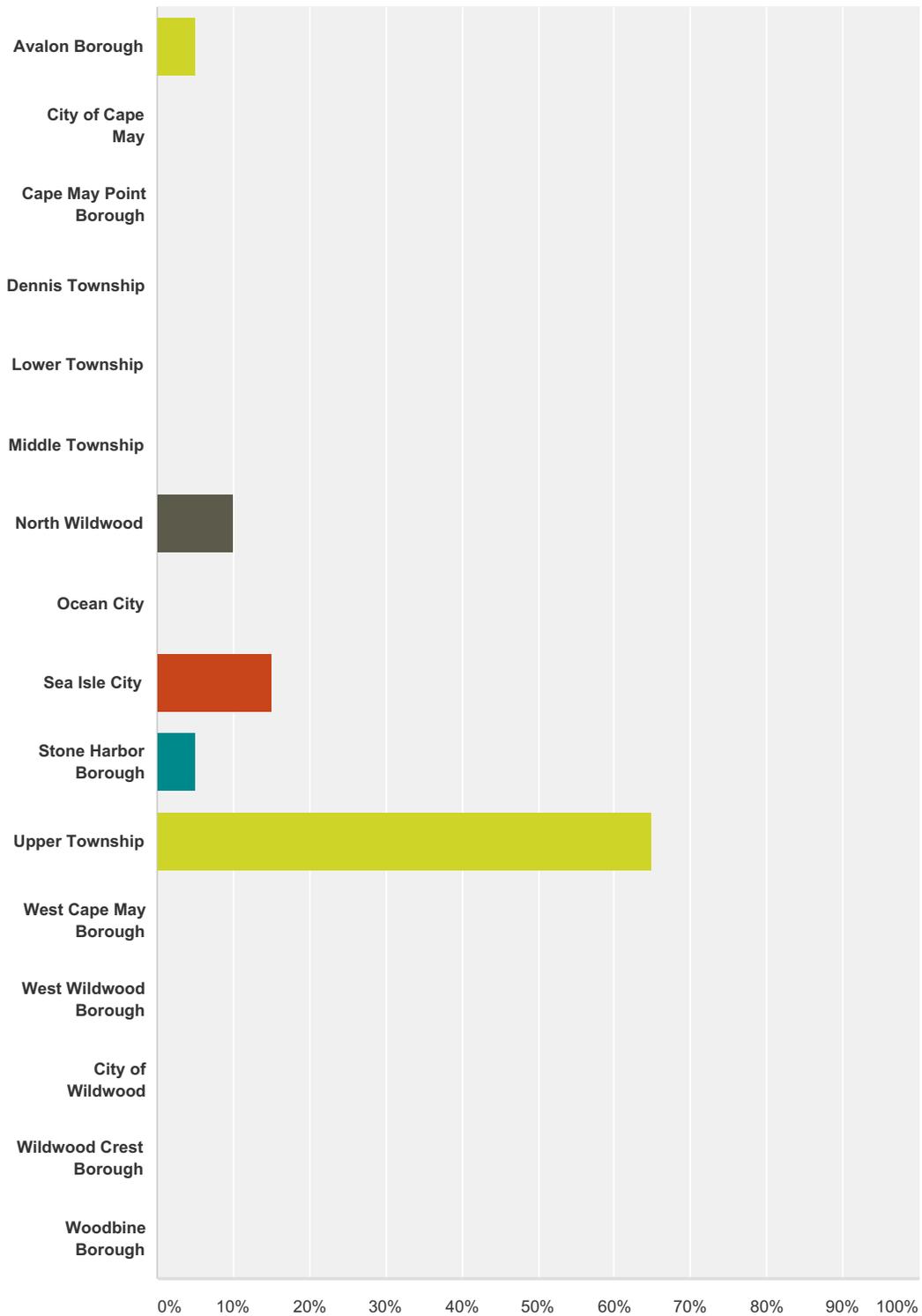
Answered: 20 Skipped: 0



Answer Choices	Responses
18 to 30	0.00% 0
31 to 40	15.00% 3
41 to 50	5.00% 1
51 to 60	35.00% 7
60 or over	45.00% 9
Total	20

Q2 Please indicate in which municipality you live:

Answered: 20 Skipped: 0



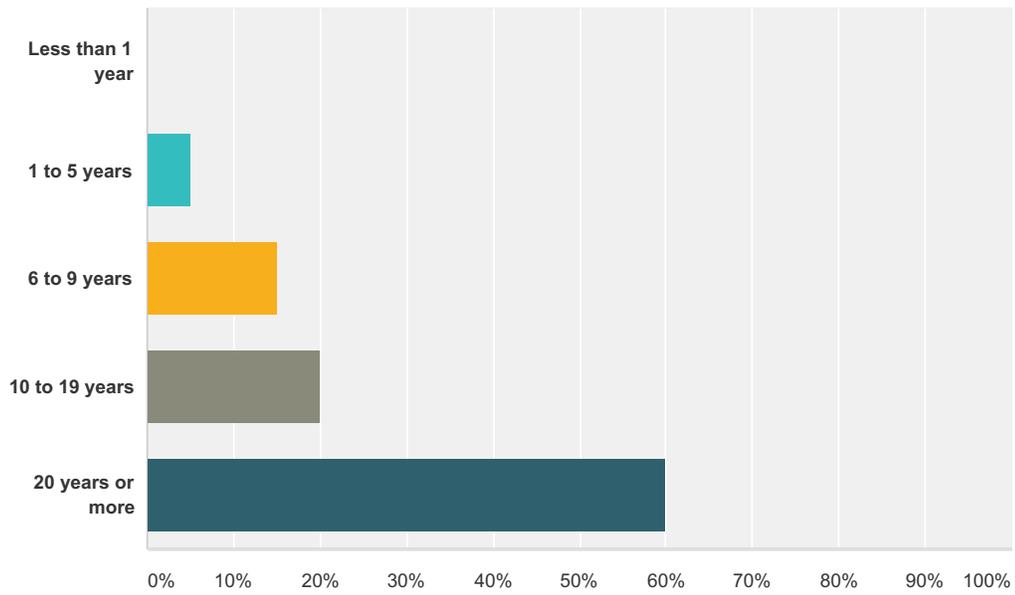
Answer Choices	Responses
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Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey

Avalon Borough	5.00%	1
City of Cape May	0.00%	0
Cape May Point Borough	0.00%	0
Dennis Township	0.00%	0
Lower Township	0.00%	0
Middle Township	0.00%	0
North Wildwood	10.00%	2
Ocean City	0.00%	0
Sea Isle City	15.00%	3
Stone Harbor Borough	5.00%	1
Upper Township	65.00%	13
West Cape May Borough	0.00%	0
West Wildwood Borough	0.00%	0
City of Wildwood	0.00%	0
Wildwood Crest Borough	0.00%	0
Woodbine Borough	0.00%	0
Total		20

Q3 How long have you lived here?

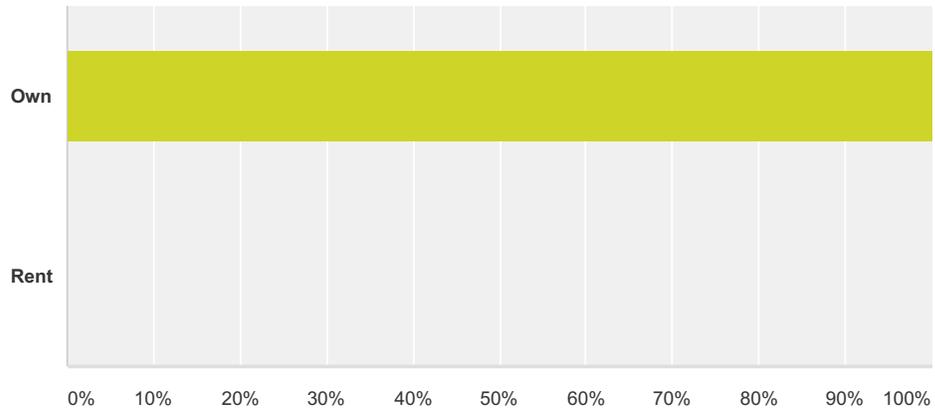
Answered: 20 Skipped: 0



Answer Choices	Responses
Less than 1 year	0.00% 0
1 to 5 years	5.00% 1
6 to 9 years	15.00% 3
10 to 19 years	20.00% 4
20 years or more	60.00% 12
Total	20

Q4 Do you own or rent your place of residence?

Answered: 20 Skipped: 0



Answer Choices	Responses
Own	100.00% 20
Rent	0.00% 0
Total	20

Q5 What is your zip code?

Answered: 19 Skipped: 1

#	Responses	Date
1	08260	4/27/2016 12:28 PM
2	08247	4/2/2016 3:27 PM
3	08243	3/29/2016 1:27 PM
4	08243	3/25/2016 9:24 AM
5	08248	3/24/2016 5:54 PM
6	08234	3/24/2016 5:16 PM
7	08230	2/24/2016 4:11 PM
8	08260	1/26/2016 8:56 AM
9	08223	1/14/2016 12:45 PM
10	08230	12/28/2015 2:13 PM
11	08230	12/22/2015 7:53 AM
12	08230	12/8/2015 6:52 AM
13	08223	11/11/2015 3:56 PM
14	08230	11/3/2015 12:32 AM
15	08223	10/26/2015 7:15 PM
16	08223	10/15/2015 7:06 PM
17	08248	10/14/2015 8:20 PM
18	08230	10/13/2015 4:28 PM
19	08230	10/7/2015 9:42 AM

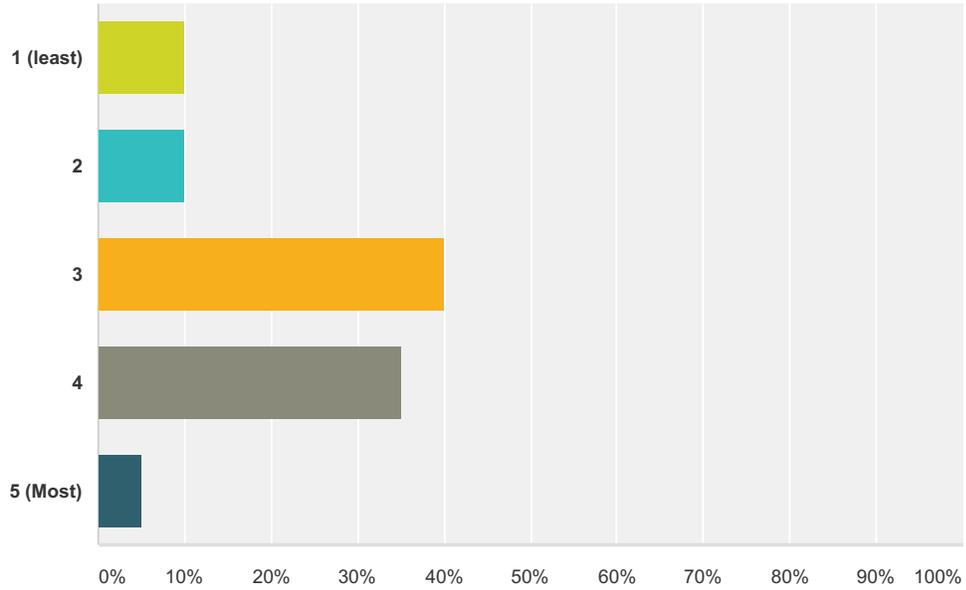
Q6 What is your home address? (optional, will be kept confidential - only used to identify localized hazard areas such as flooding)

Answered: 16 Skipped: 4

#	Responses	Date
1	[REDACTED]	4/27/2016 12:28 PM
2	[REDACTED]	4/2/2016 3:27 PM
3	[REDACTED]	3/29/2016 1:27 PM
4	[REDACTED]	3/25/2016 9:24 AM
5	[REDACTED]	3/24/2016 5:54 PM
6	1 [REDACTED] 4	3/24/2016 5:16 PM
7	[REDACTED]	2/24/2016 4:11 PM
8	[REDACTED]	1/14/2016 12:45 PM
9	[REDACTED]	12/28/2015 2:13 PM
10	[REDACTED]	12/22/2015 7:53 AM
11	[REDACTED]	12/8/2015 6:52 AM
12	[REDACTED]	11/11/2015 3:56 PM
13	[REDACTED]	10/26/2015 7:15 PM
14	[REDACTED]	10/14/2015 8:20 PM
15	[REDACTED]	10/13/2015 4:28 PM
16	[REDACTED]	10/7/2015 9:42 AM

Q7 Rank how prepared you feel you and your household are for natural disaster events likely to occur within your municipality. Rank on a scale of 1 to 5, with 5 representing the most prepared.

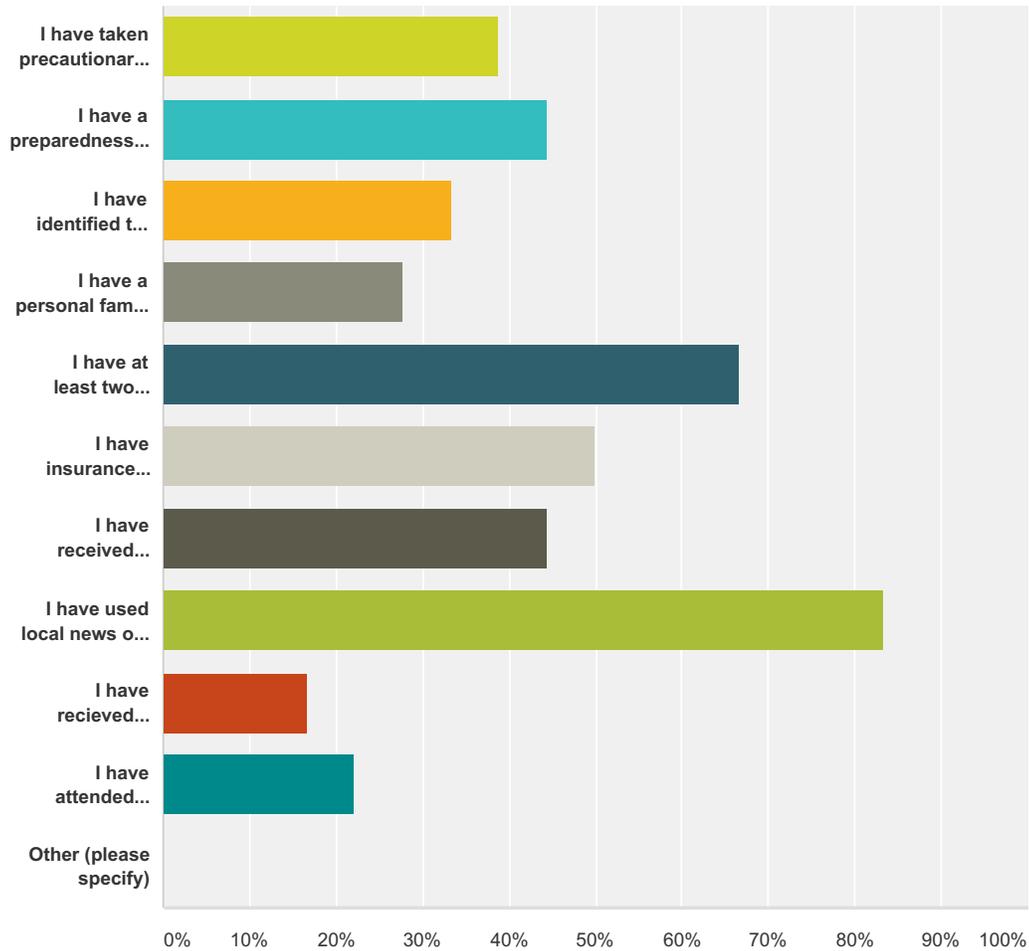
Answered: 20 Skipped: 0



Answer Choices	Responses
1 (least)	10.00% 2
2	10.00% 2
3	40.00% 8
4	35.00% 7
5 (Most)	5.00% 1
Total	20

Q8 In what ways do you believe you are prepared for a natural disaster that may occur within your municipality? (Please check all that apply)

Answered: 18 Skipped: 2



Answer Choices	Responses
I have taken precautionary measures to protect my property though retrofits or when constructed	38.89% 7
I have a preparedness kit consisting of basic supplies and materials for my family and myself	44.44% 8
I have identified the location of the nearest severe weather shelter	33.33% 6
I have a personal family emergency preparedness plan, and have discussed it with my family and others for whom I have responsibility	27.78% 5
I have at least two methods for receiving emergency notifications and for information during severe weather or other potential emergency situations	66.67% 12
I have insurance policies to cover losses from specific risks (e.g. flood insurance)	50.00% 9
I have received emergency preparedness information from a government source (e.g., federal, state, or local emergency management)	44.44% 8
I have used local news or other media to obtain information	83.33% 15
I have recieved information from schools and other academic institutions	16.67% 3

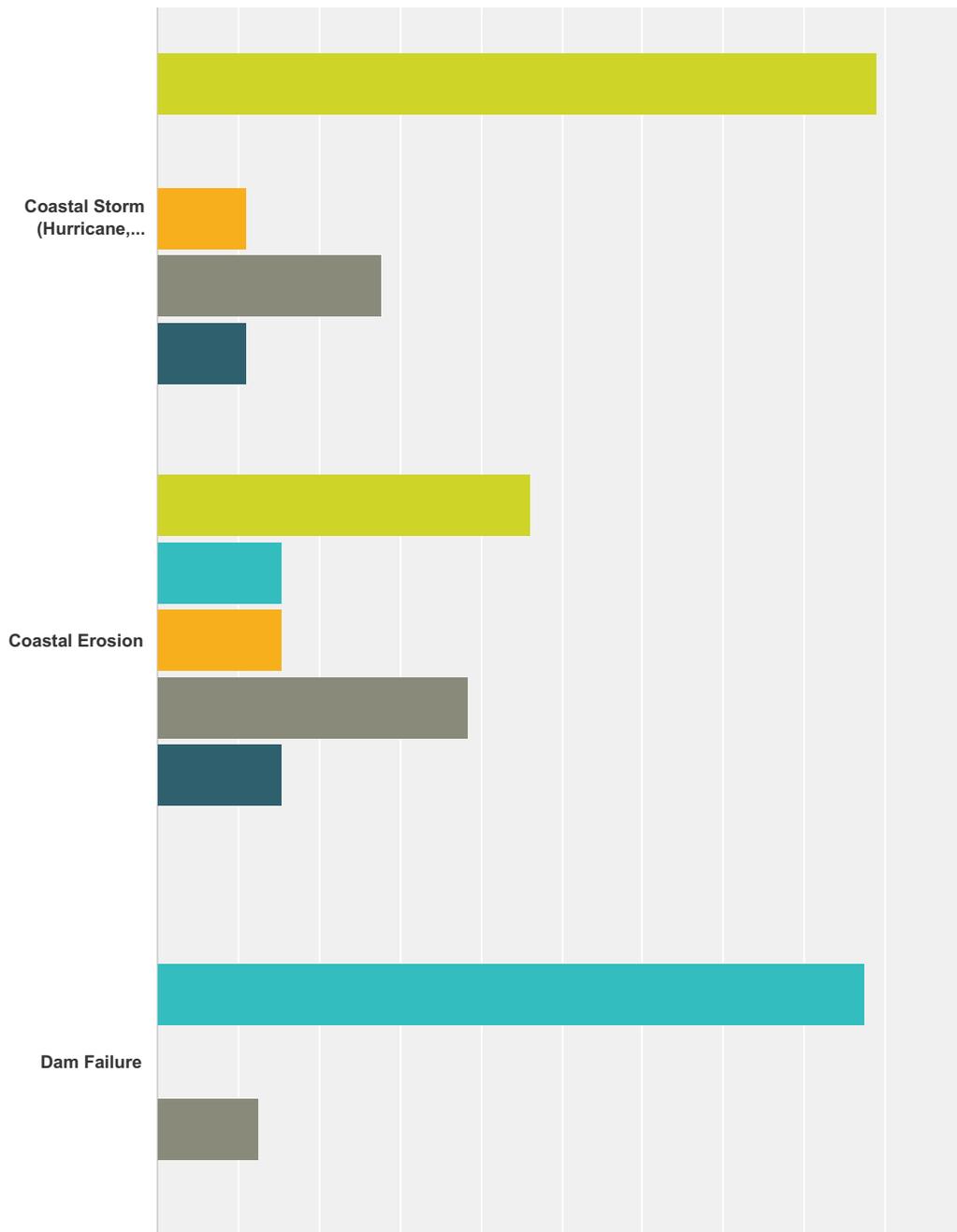
Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey

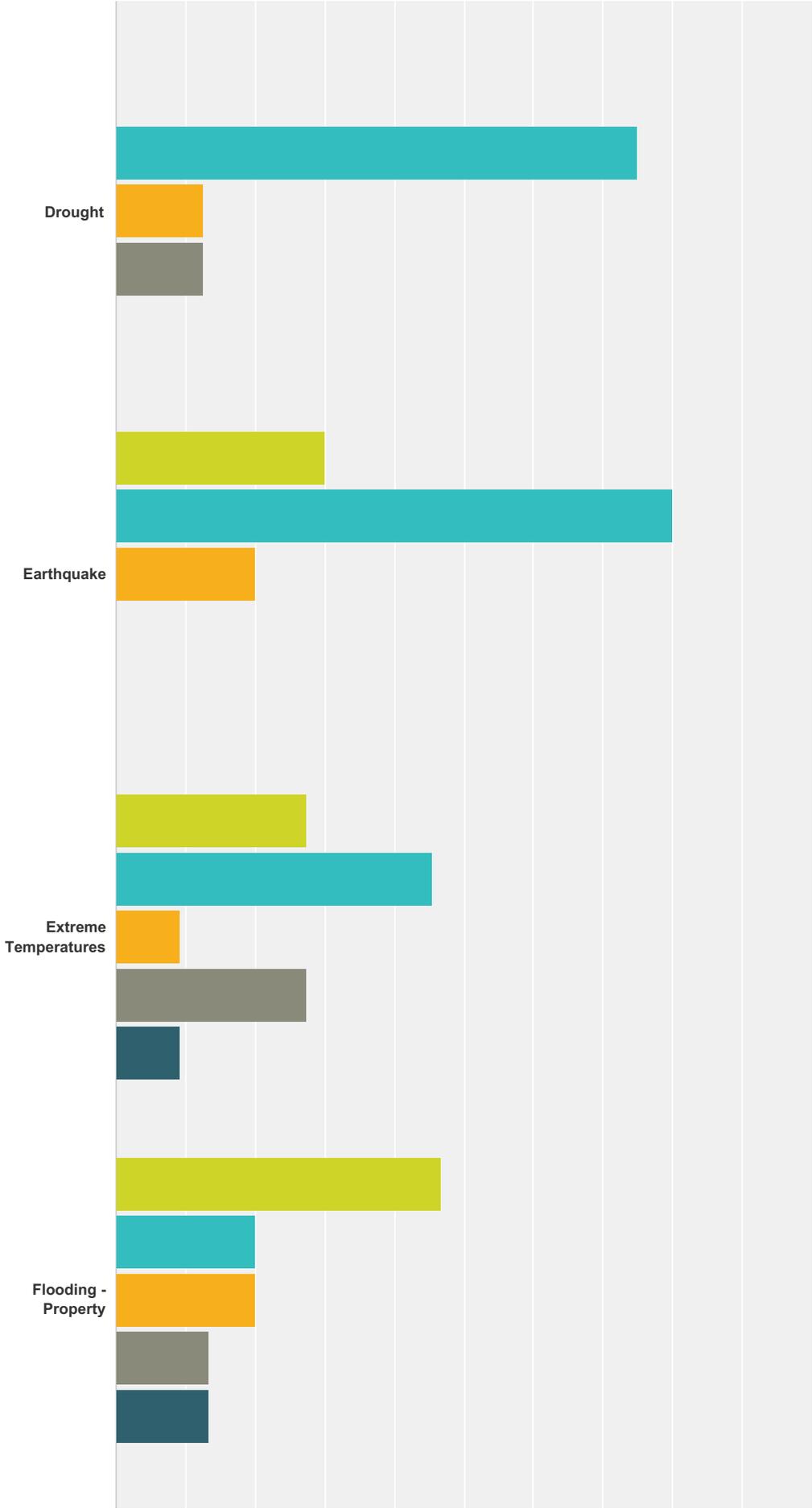
I have attended meetings that have dealt with disaster preparedness	22.22%	4
Other (please specify)	0.00%	0
Total Respondents: 18		

#	Other (please specify)	Date
	There are no responses.	

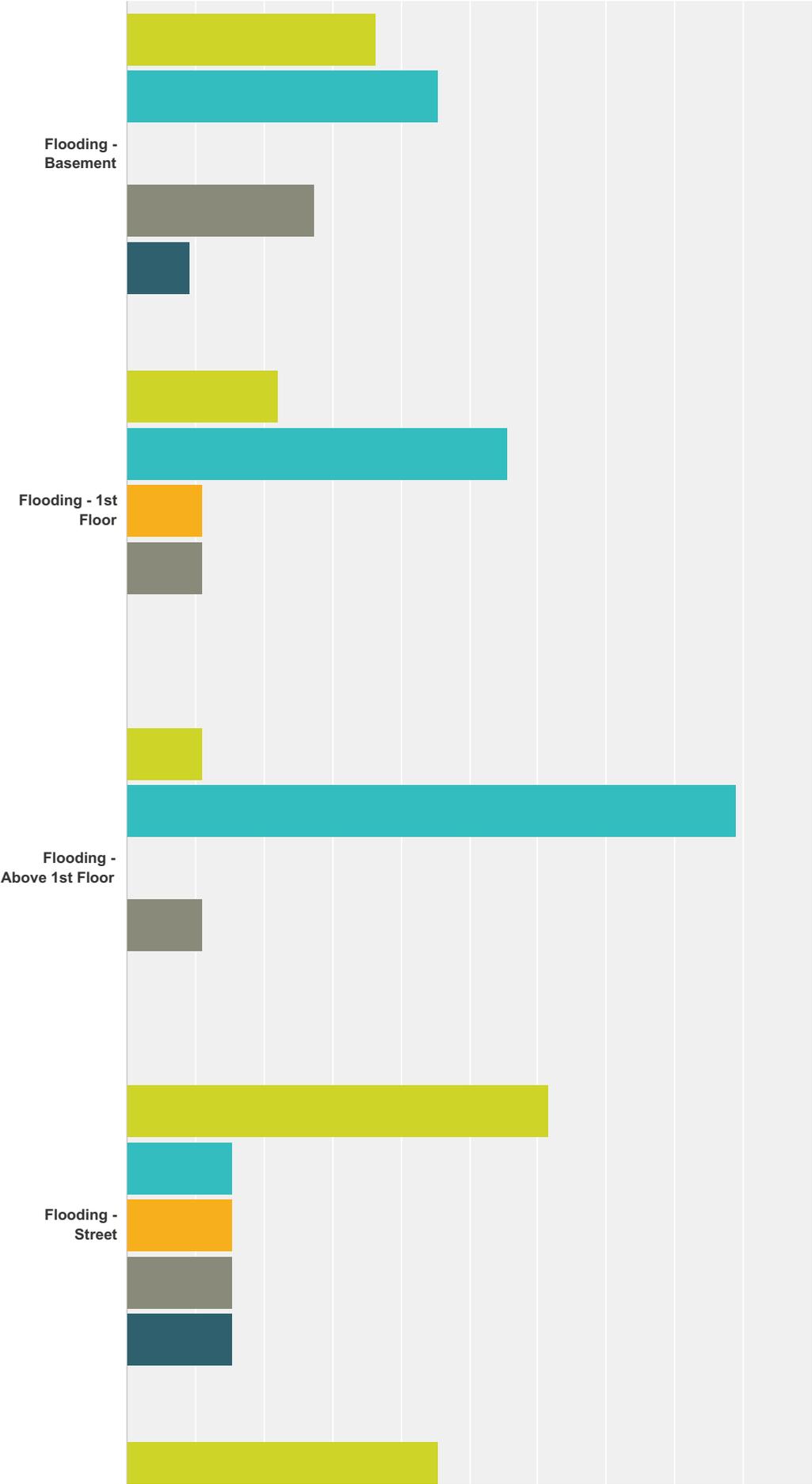
Q9 In the past 10 years, which of the following types of natural disasters have you or someone in your household experienced, or sustained damage as a result of, and how concerned are you about the following natural hazards impacting the area, within Cape May County? (In the first column indicate if you have experienced the hazard, then indicate your level of concern).

Answered: 18 Skipped: 2

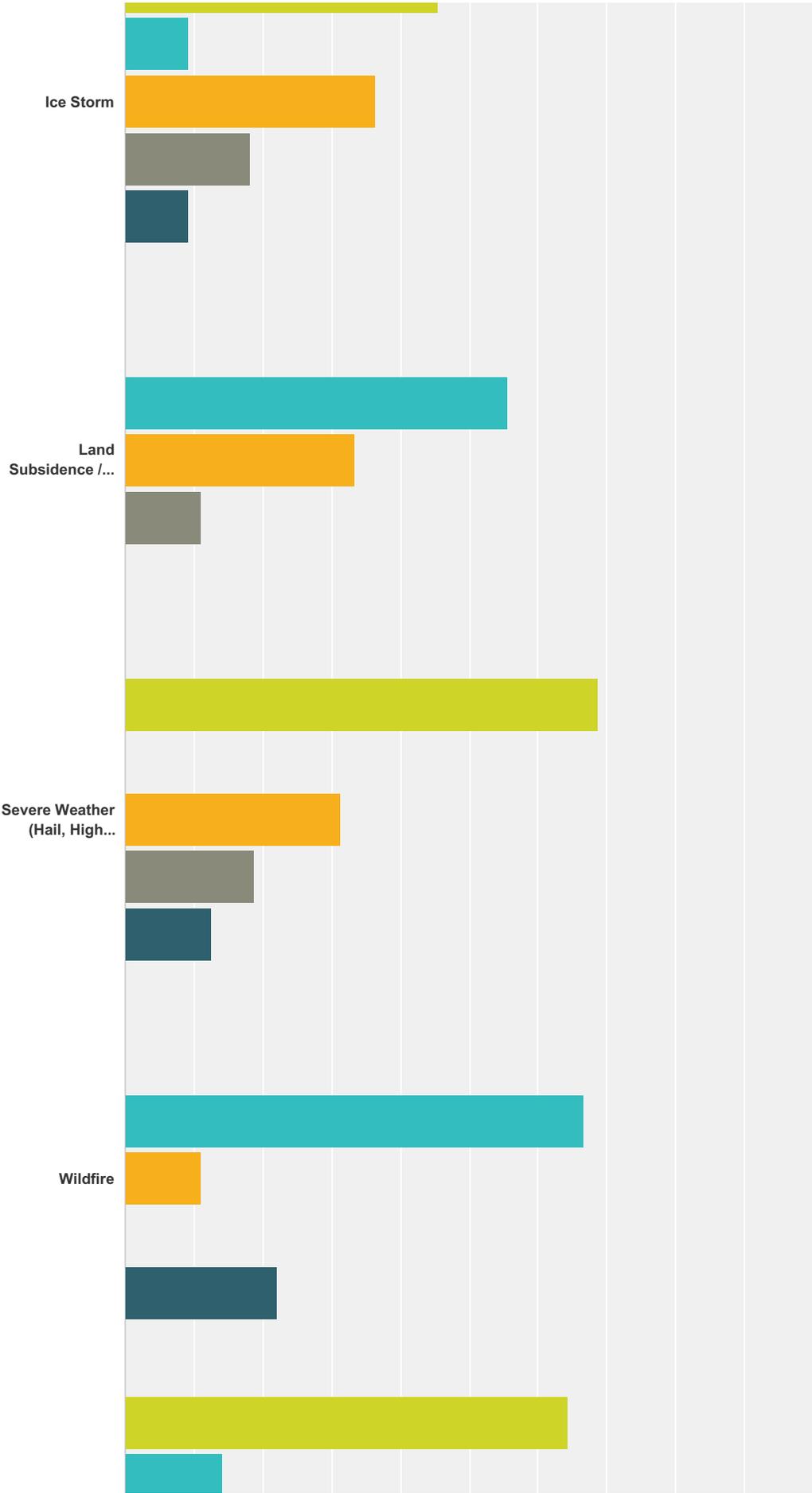




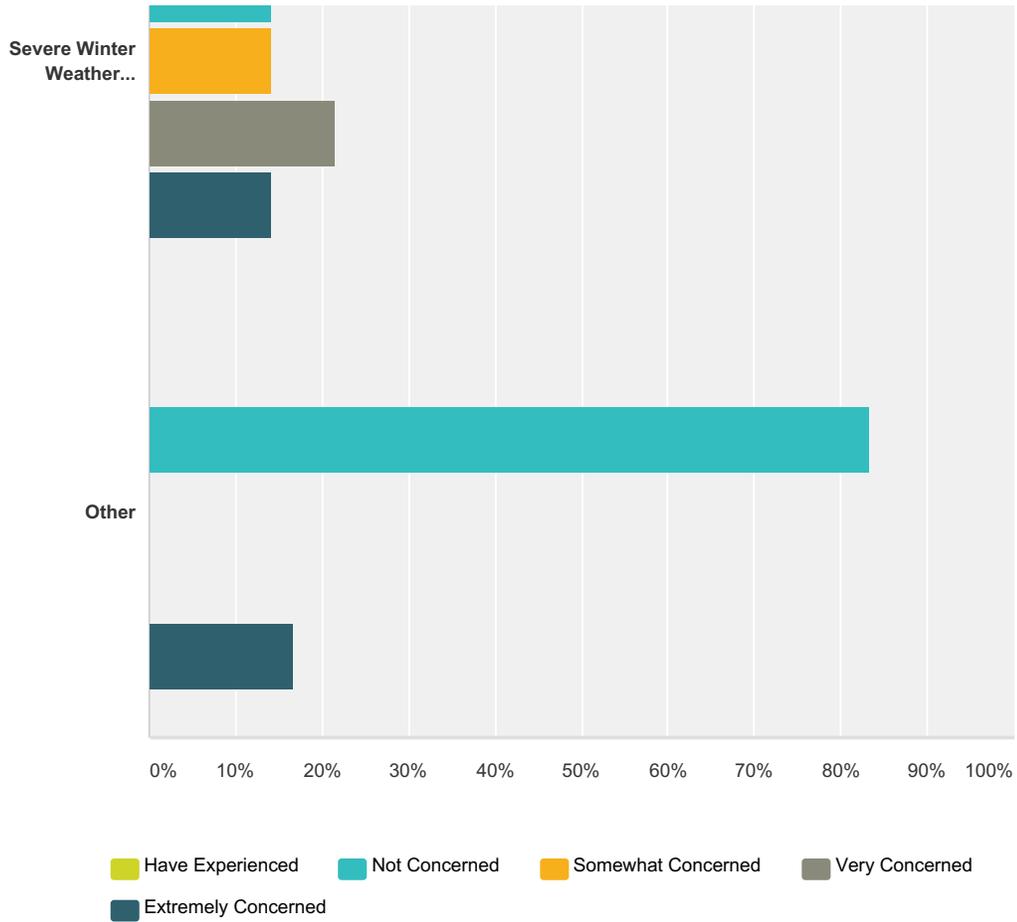
Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey



Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey



Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey



	Have Experienced	Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned	Total Respondents
Coastal Storm (Hurricane, Tropical Storm, Nor'Easter)	88.89% 16	0.00% 0	11.11% 2	27.78% 5	11.11% 2	18
Coastal Erosion	46.15% 6	15.38% 2	15.38% 2	38.46% 5	15.38% 2	13
Dam Failure	0.00% 0	87.50% 7	0.00% 0	12.50% 1	0.00% 0	8
Drought	0.00% 0	75.00% 6	12.50% 1	12.50% 1	0.00% 0	8
Earthquake	30.00% 3	80.00% 8	20.00% 2	0.00% 0	0.00% 0	10
Extreme Temperatures	27.27% 3	45.45% 5	9.09% 1	27.27% 3	9.09% 1	11
Flooding - Property	46.67% 7	20.00% 3	20.00% 3	13.33% 2	13.33% 2	15
Flooding - Basement	36.36% 4	45.45% 5	0.00% 0	27.27% 3	9.09% 1	11
Flooding - 1st Floor	22.22% 2	55.56% 5	11.11% 1	11.11% 1	0.00% 0	9
Flooding - Above 1st Floor	11.11% 1	88.89% 8	0.00% 0	11.11% 1	0.00% 0	9

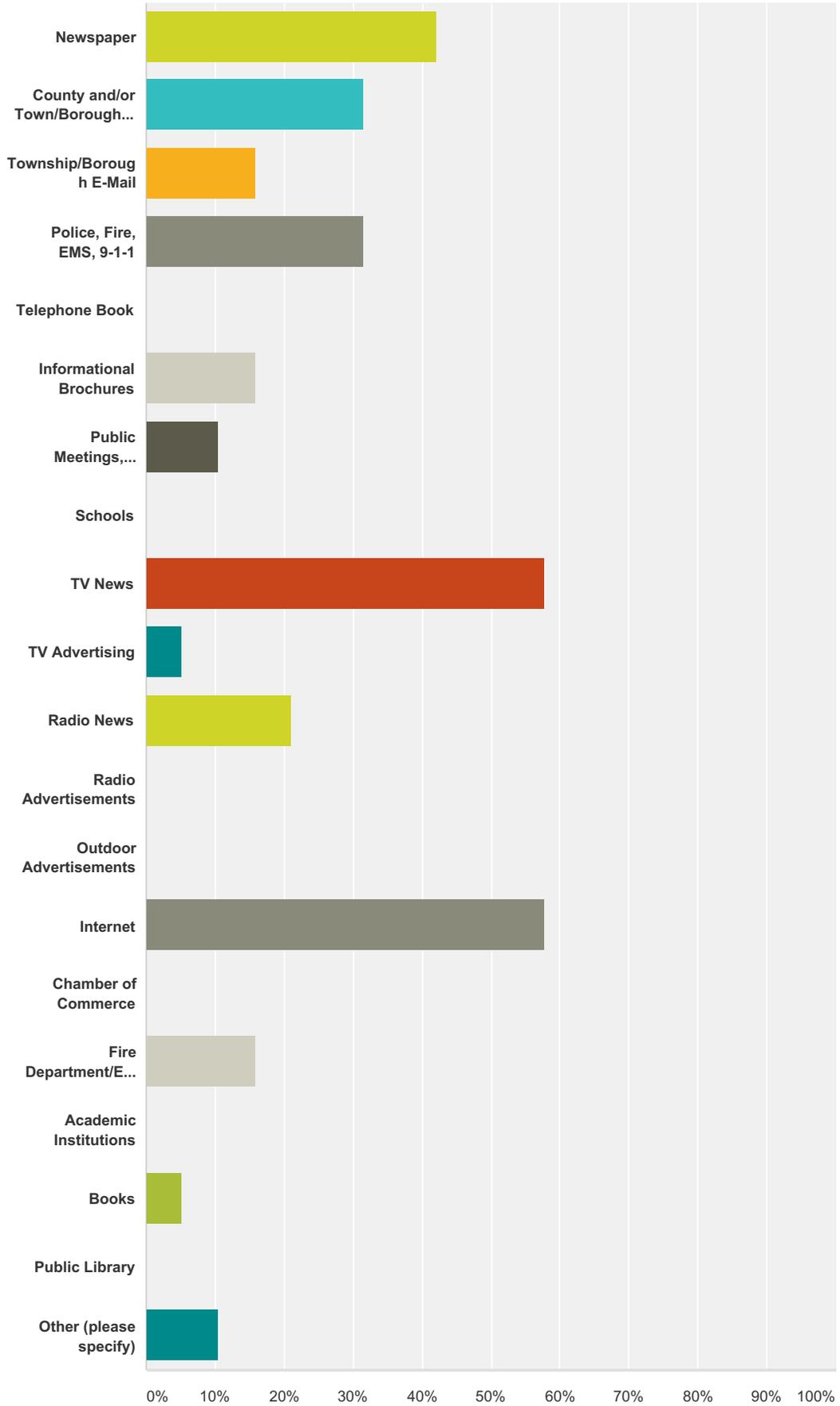
Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey

Flooding - Street	61.54% 8	15.38% 2	15.38% 2	15.38% 2	15.38% 2	13
Ice Storm	45.45% 5	9.09% 1	36.36% 4	18.18% 2	9.09% 1	11
Land Subsidence / Sinkholes	0.00% 0	55.56% 5	33.33% 3	11.11% 1	0.00% 0	9
Severe Weather (Hail, High Winds, Tornado, Lightning)	68.75% 11	0.00% 0	31.25% 5	18.75% 3	12.50% 2	16
Wildfire	0.00% 0	66.67% 6	11.11% 1	0.00% 0	22.22% 2	9
Severe Winter Weather (Blizzard, Heavy Snowfall)	64.29% 9	14.29% 2	14.29% 2	21.43% 3	14.29% 2	14
Other	0.00% 0	83.33% 5	0.00% 0	0.00% 0	16.67% 1	6

Q10 Of the information sources below, please identify the top three (3) that are MOST EFFECTIVE in providing you with information to make your home safer and better able to withstand the impact of natural disaster events.

Answered: 19 Skipped: 1

Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey



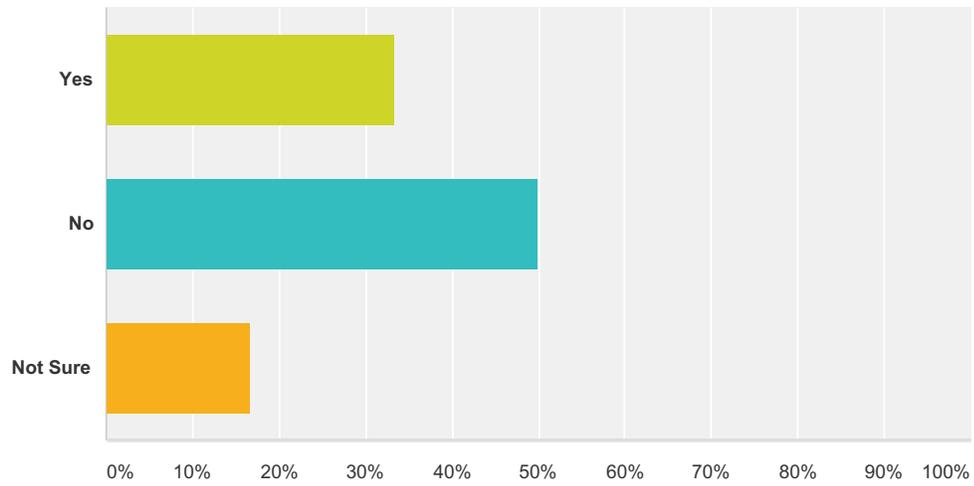
Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey

Answer Choices	Responses	
Newspaper	42.11%	8
County and/or Town/Borough Websites	31.58%	6
Township/Borough E-Mail	15.79%	3
Police, Fire, EMS, 9-1-1	31.58%	6
Telephone Book	0.00%	0
Informational Brochures	15.79%	3
Public Meetings, Workshops, or Public Awareness Events	10.53%	2
Schools	0.00%	0
TV News	57.89%	11
TV Advertising	5.26%	1
Radio News	21.05%	4
Radio Advertisements	0.00%	0
Outdoor Advertisements	0.00%	0
Internet	57.89%	11
Chamber of Commerce	0.00%	0
Fire Department/EMS Agency	15.79%	3
Academic Institutions	0.00%	0
Books	5.26%	1
Public Library	0.00%	0
Other (please specify)	10.53%	2
Total Respondents: 19		

#	Other (please specify)	Date
1	Text alert	3/25/2016 9:27 AM
2	Reverse 911	11/11/2015 3:59 PM

Q11 To the best of your knowledge is your property located in a designated floodplain?

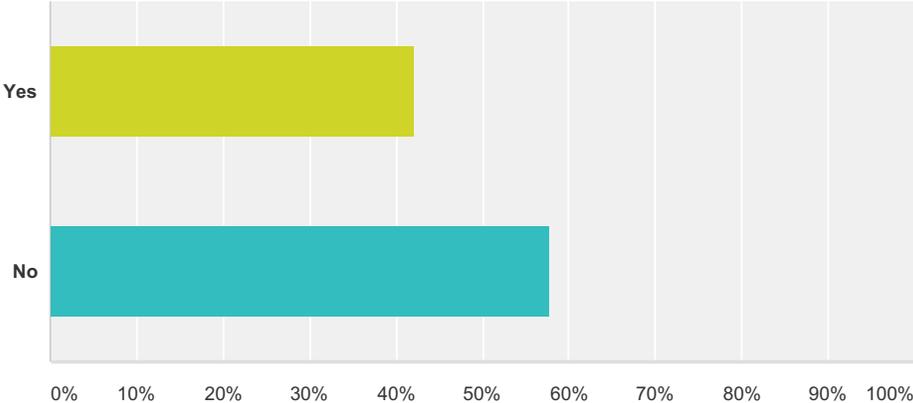
Answered: 18 Skipped: 2



Answer Choices	Responses	
Yes	33.33%	6
No	50.00%	9
Not Sure	16.67%	3
Total		18

Q12 Do you have flood insurance?

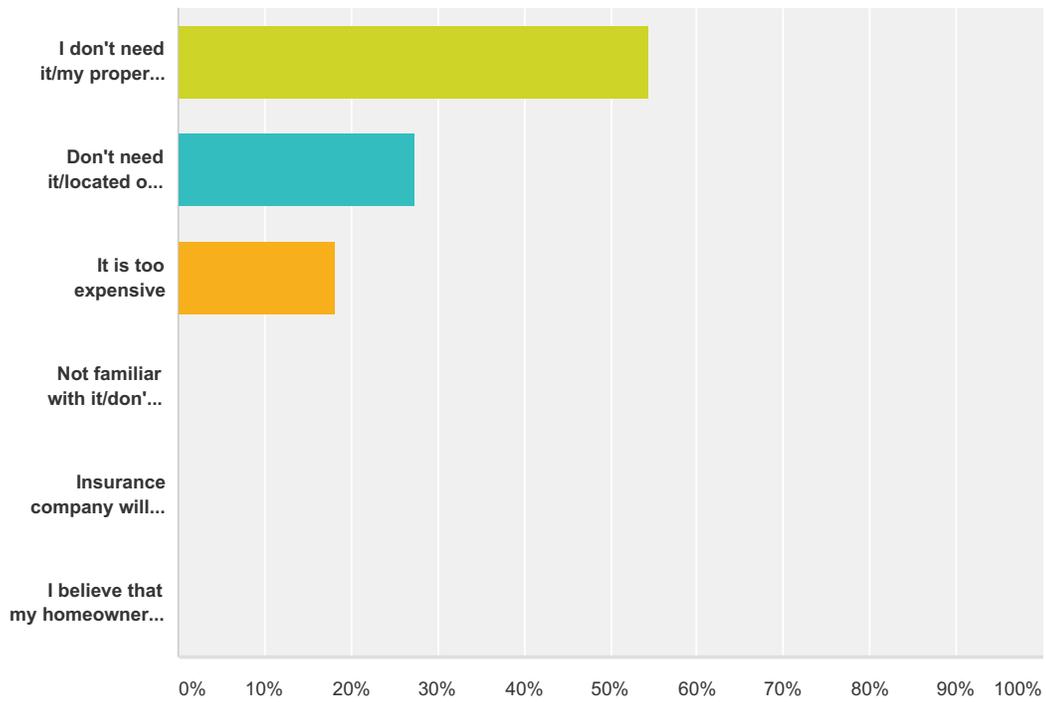
Answered: 19 Skipped: 1



Answer Choices	Responses
Yes	42.11% 8
No	57.89% 11
Total	19

Q13 If you do NOT have flood insurance, what is the primary reason?

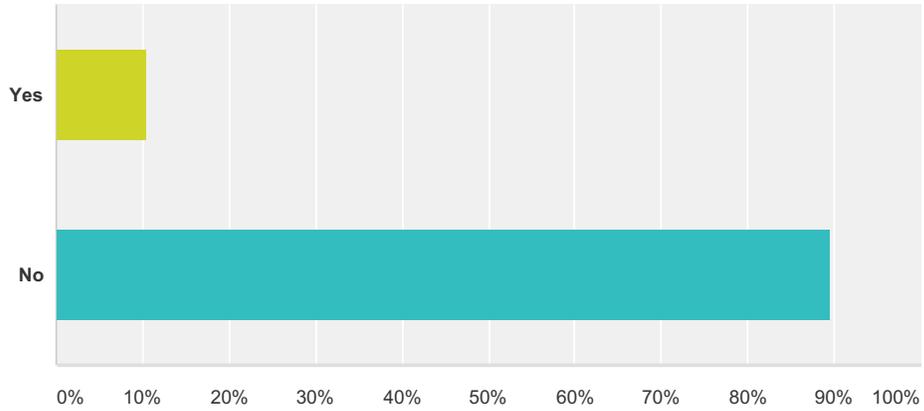
Answered: 11 Skipped: 9



Answer Choices	Responses
I don't need it/my property has never flooded	54.55% 6
Don't need it/located on high ground	27.27% 3
It is too expensive	18.18% 2
Not familiar with it/don't know about it	0.00% 0
Insurance company will not provide	0.00% 0
I believe that my homeowners insurance will cover me	0.00% 0
Total	11

Q14 Do you or did you have problems getting homeowners/renters insurance due to risks from natural hazards?

Answered: 19 Skipped: 1



Answer Choices	Responses	
Yes	10.53%	2
No	89.47%	17
Total		19

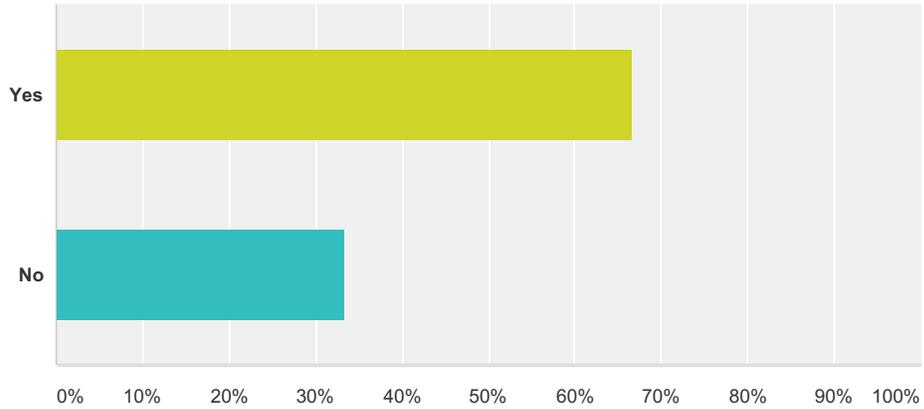
Q15 If you answered "yes" to the previous question, please identify the natural hazard risk that caused you to have problems obtaining homeowners/renters insurance.

Answered: 2 Skipped: 18

#	Responses	Date
1	flood, wind	3/29/2016 1:30 PM
2	Prev. ins. co. pulled out of NJ due to higher risk of hurricanes	10/14/2015 8:24 PM

Q16 Did you consider the impact a natural disaster could have on your home before you purchased/moved into your home?

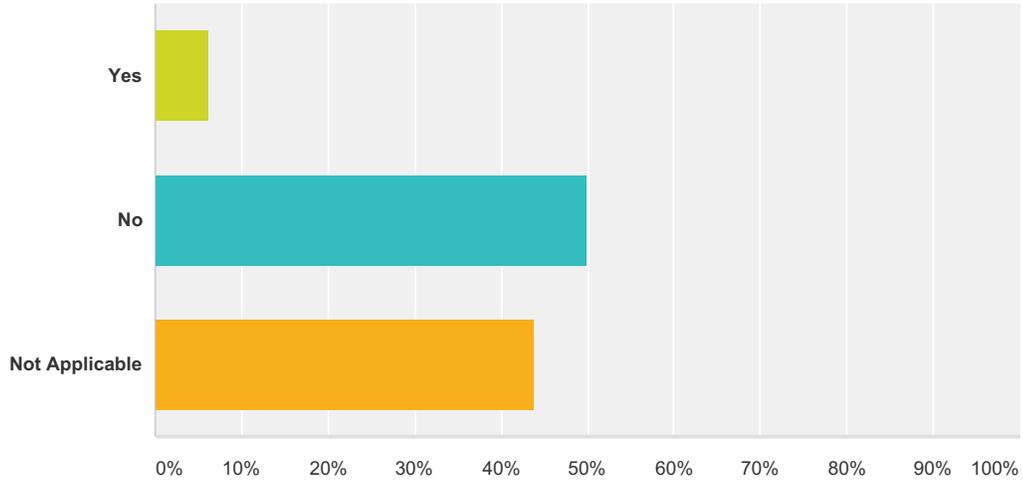
Answered: 15 Skipped: 5



Answer Choices	Responses	
Yes	66.67%	10
No	33.33%	5
Total		15

Q17 Was the presence of a natural hazard risk zone (for example, flood zone) disclosed to you by a real estate agent, seller, or landlord before you purchased/moved into your home?

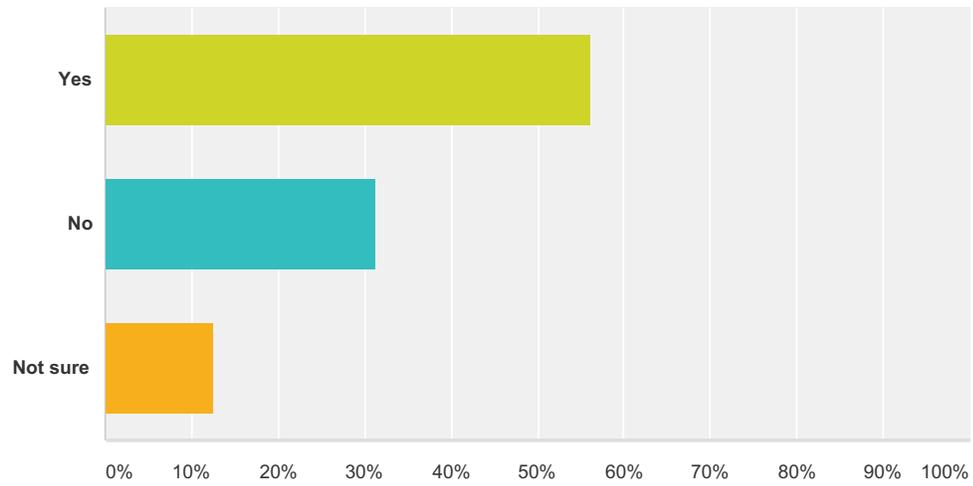
Answered: 16 Skipped: 4



Answer Choices	Responses
Yes	6.25% 1
No	50.00% 8
Not Applicable	43.75% 7
Total	16

Q18 Would the disclosure of this type of information influence your decision to purchase/move into a home?

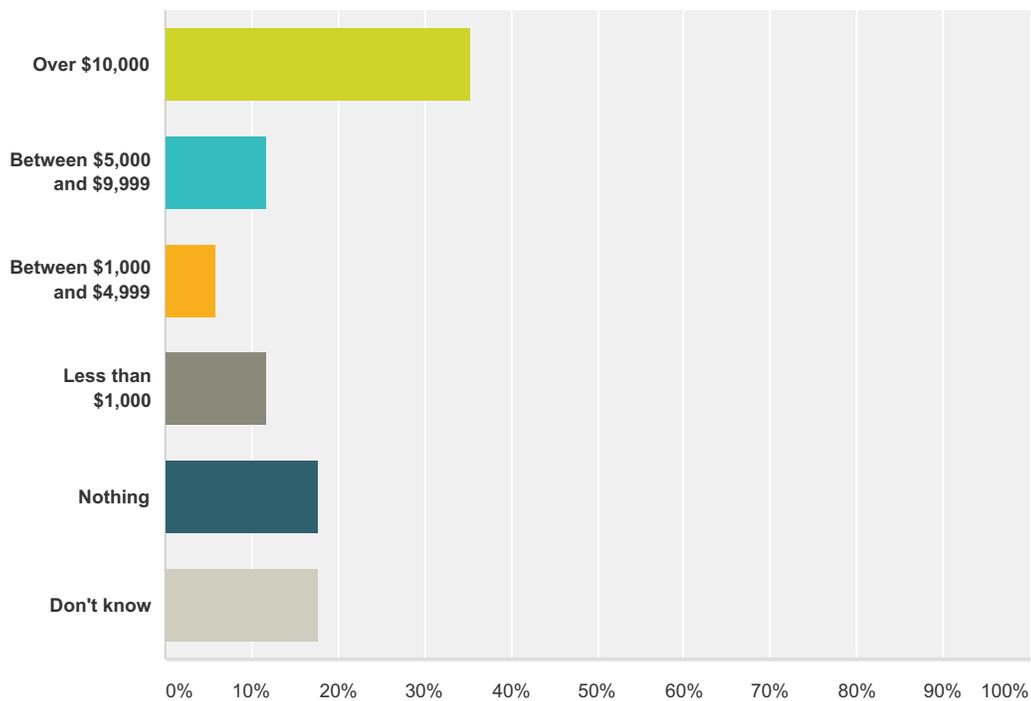
Answered: 16 Skipped: 4



Answer Choices	Responses	
Yes	56.25%	9
No	31.25%	5
Not sure	12.50%	2
Total		16

Q19 How much money would you be willing to spend on your current home to help protect it from the impacts of potential future natural disasters within our community? Examples are: Elevating a flood-prone home; elevating utilities in flood-prone basements; strengthening your roof, siding, doors or windows to withstand high winds; removing threatening trees or branches.

Answered: 17 Skipped: 3



Answer Choices	Responses
Over \$10,000	35.29% 6
Between \$5,000 and \$9,999	11.76% 2
Between \$1,000 and \$4,999	5.88% 1
Less than \$1,000	11.76% 2
Nothing	17.65% 3
Don't know	17.65% 3
Total	17

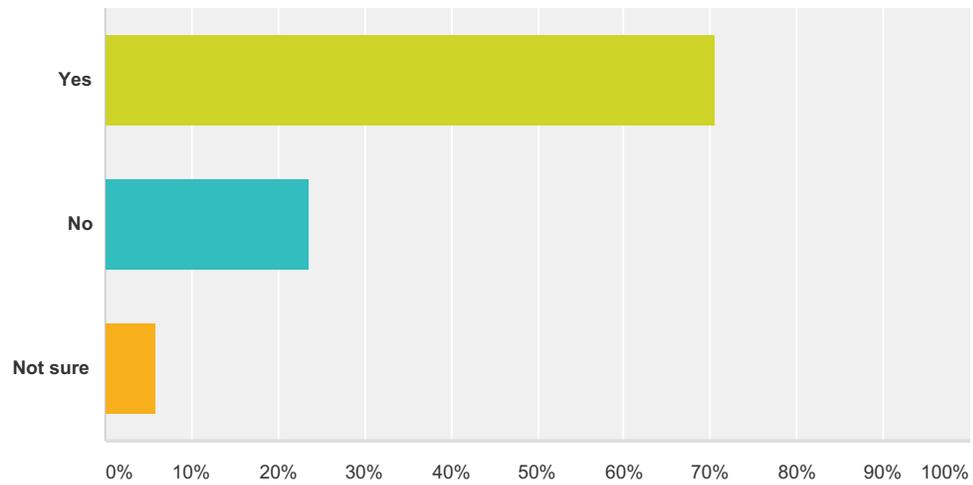
Q20 Which, if any incentives would motivate you to spend money on protecting your home from the possible impacts of a natural disaster? (such as lower interest rates, grant funding, waivers, etc.)

Answered: 15 Skipped: 5

#	Responses	Date
1	grants	4/27/2016 12:42 PM
2	Grants, Loans	4/2/2016 3:35 PM
3	grant funding	3/29/2016 1:32 PM
4	grant funding	3/25/2016 9:28 AM
5	grants and waivers	3/24/2016 6:07 PM
6	grant funding, tax abatment	3/24/2016 5:23 PM
7	grant funding	1/26/2016 9:05 AM
8	grant funding; extended long term interest free loans	12/28/2015 2:19 PM
9	Grants	12/22/2015 7:59 AM
10	Have the government pay for it for a change; tax break and incentive	12/8/2015 6:58 AM
11	grants	11/11/2015 4:01 PM
12	Waivers	10/26/2015 7:22 PM
13	grant/loan programs	10/15/2015 7:11 PM
14	Grant funding.	10/14/2015 8:26 PM
15	grant funding	10/7/2015 9:46 AM

Q21 If your property were located in a designated "high hazard" area, or had received repeated damages from a natural disaster event, would you consider a "buyout", "elevation" of the structure, or "relocation"? This is for research purposes only. This is not a guarantee of any formal offer or intent of any future offer by any entity of any municipal, county, state or federal government.

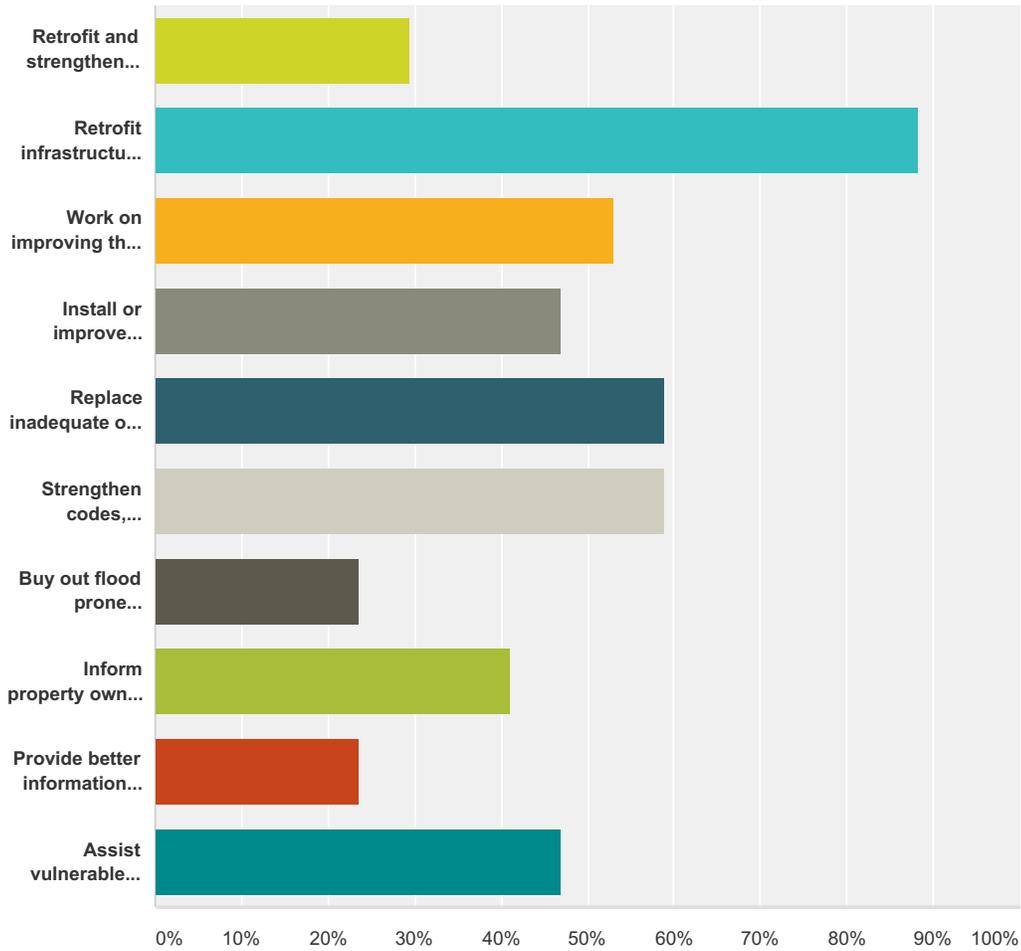
Answered: 17 Skipped: 3



Answer Choices	Responses
Yes	70.59% 12
No	23.53% 4
Not sure	5.88% 1
Total	17

Q22 What types of projects do you believe local, county, state or federal government agencies could be doing in order to reduce the damage and disruption of natural disasters in Cape May County? Select your top three choices

Answered: 17 Skipped: 3



Answer Choices	Responses
Retrofit and strengthen essential facilities such as police, schools, hospitals	29.41% 5
Retrofit infrastructure, such as elevating roadways and improving drainage systems	88.24% 15
Work on improving the damage resistance of utilities (electricity, communications, water/wstewater facilities etc.)	52.94% 9
Install or improve protective structures, such as floodwalls or levees	47.06% 8
Replace inadequate or vulnerable bridges and causeways	58.82% 10

Cape May County Hazard Mitigation Plan 2015 Update - Citizen Survey

Strengthen codes, ordinances and plans to require higher hazard risk management standards and/or provide greater control over development in high hazard areas	58.82%	10
Buy out flood prone properties and maintain as open-space	23.53%	4
Inform property owners of ways they can mitigate damage to their properties	41.18%	7
Provide better information about hazard risks and high-hazard areas	23.53%	4
Assist vulnerable property owners with securing funding to mitigate their properties	47.06%	8
Total Respondents: 17		

Q23 Please list any additional types of projects you believe local, county, state or federal government agencies could be doing in order to reduce the damage and disruption of natural disasters in Cape May County?

Answered: 4 Skipped: 16

#	Responses	Date
1	Build seawall along bayside just as we have on oceanside.	4/27/2016 12:42 PM
2	Not building an elevated road behind an existing community	12/22/2015 7:59 AM
3	Upgraded utilities	10/26/2015 7:22 PM
4	buklkhead improvements	10/15/2015 7:11 PM

Q24 For additional information about the Cape May County Hazard Mitigation Plan Update, please visit:<http://www.capemaycountyemergency.net/>

Answered: 0 Skipped: 20

#	Responses	Date
	There are no responses.	

**Q1 Name of your Academic Institution
(school, district, higher education
institution):**

Answered: 1 Skipped: 0

#	Responses	Date
1	Test School	4/13/2016 9:14 AM

Q2 Name of Respondent:

Answered: 1 Skipped: 0

#	Responses	Date
1	Me	4/13/2016 9:14 AM

Q3 Contact information (email address or phone number) - optional:

Answered: 1 Skipped: 0

#	Responses	Date
1	Me	4/13/2016 9:14 AM

Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 1 Skipped: 0



Answer Choices	Responses
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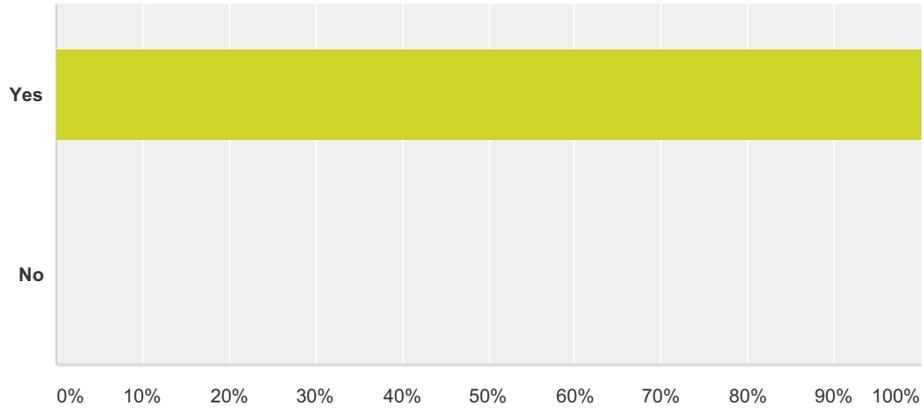
Cape May County HMP - Academia Survey

Avalon Borough	100.00%	1
City of Cape May	0.00%	0
Cape May Point Borough	0.00%	0
Dennis Township	0.00%	0
Lower Township	0.00%	0
Middle Township	0.00%	0
North Wildwood	0.00%	0
Ocean City	0.00%	0
Sea Isle City	0.00%	0
Stone Harbor Borough	0.00%	0
Upper Township	0.00%	0
West Cape May Borough	0.00%	0
West Wildwood Borough	0.00%	0
City of Wildwood	0.00%	0
Wildwood Crest Borough	0.00%	0
Woodbine Borough	0.00%	0
Total		1

#	Other (please specify)	Date
	There are no responses.	

Q5 Has your academic institution been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

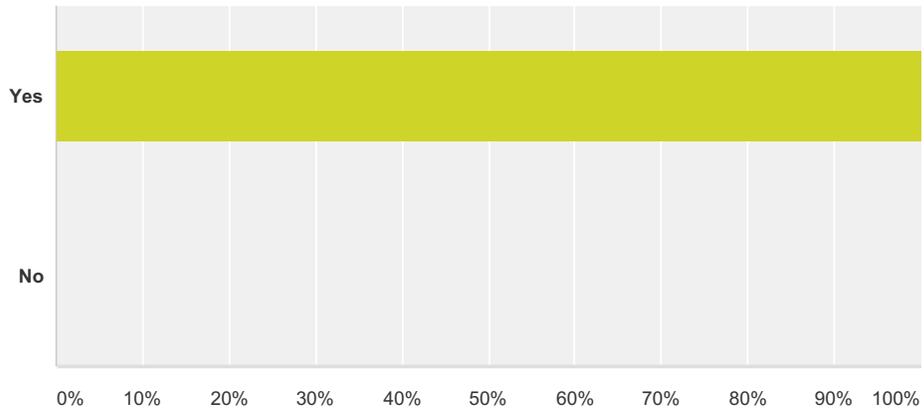


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
Total	1

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
	There are no responses.	

Q6 Do your facilities provide sheltering services during hazard events?

Answered: 1 Skipped: 0

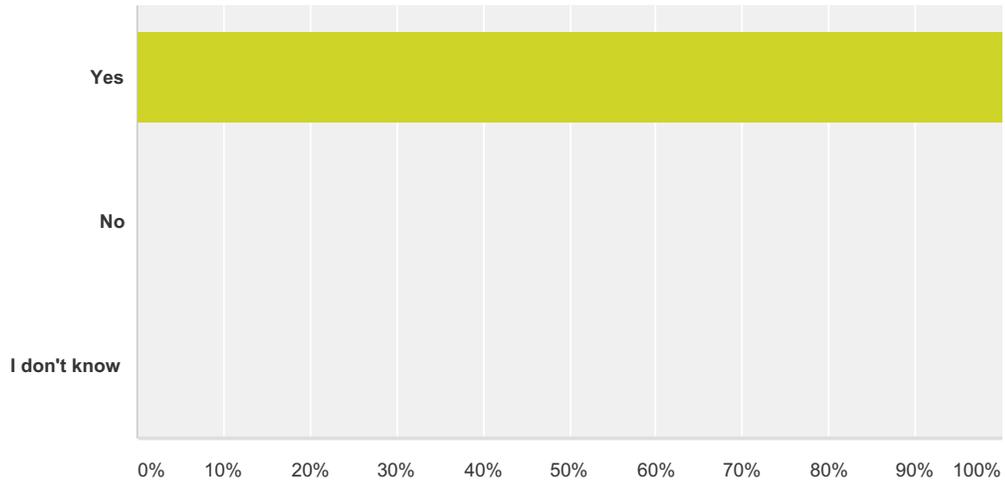


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
Total	1

#	If you answered "YES", please indicate those services that you are capable of providing.	Date
	There are no responses.	

Q7 Do you believe that your facilities and associated infrastructure are disaster-resistant, or capable of withstanding a natural disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

Answered: 1 Skipped: 0

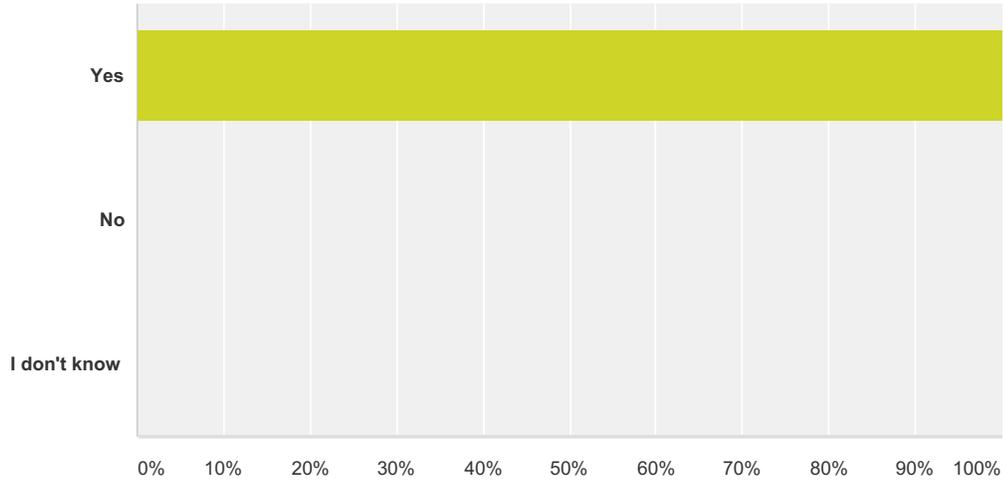


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q8 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

Answered: 1 Skipped: 0

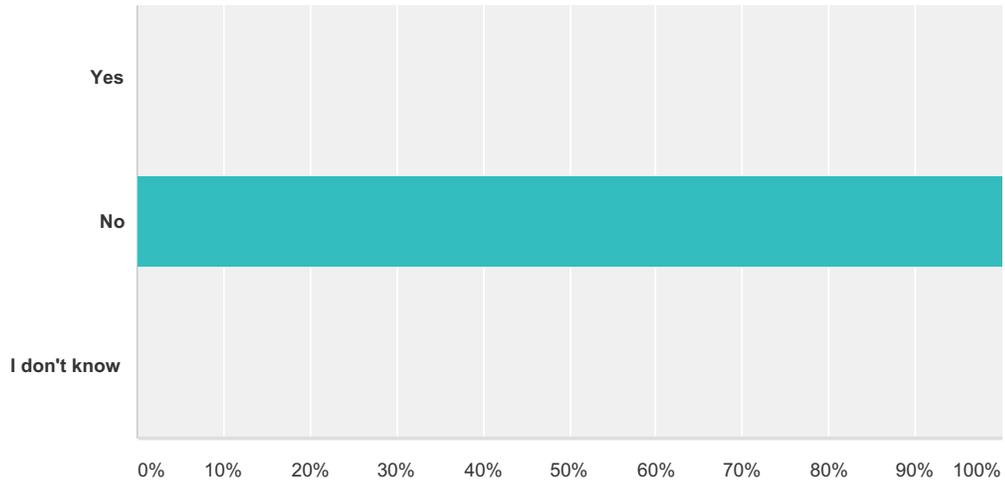


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q9 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your academic functions during and after natural hazard events?

Answered: 1 Skipped: 0

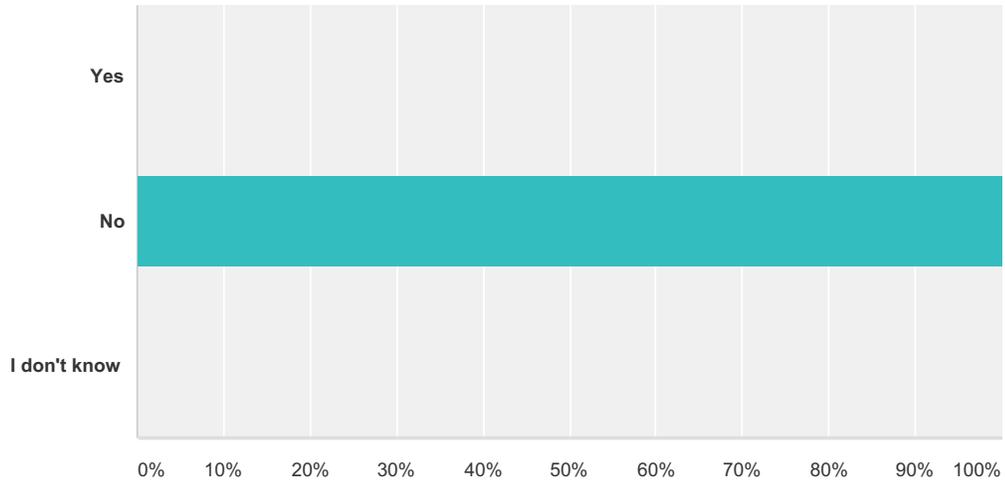


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q10 If your facilities are American Red Cross designated shelters, do you believe they are adequately designed and equipped to support sheltering during and after natural hazard events? Do your facilities have generator capabilities to support the American Red Cross shelter?

Answered: 1 Skipped: 0



Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q11 Do you think that weather forecasts and announcements of road closures and pending road closures are sufficiently accurate and available to support your institution's operation and student transportation decisions in the event of natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q12 Do you believe that emergency response planning, services, and equipment are capable of managing and responding properly to natural disasters in your community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q13 Do you believe that local government understands, supports, and possesses adequate resources for natural hazard risk reduction efforts in the community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q14 Is your institution covered by a Continuity of Operations (COOP) plan? COOP plans examine an institution's ability to perform minimum essential functions during any situation, and support the continuance of institution functions.

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	If "Yes", please explain.	Date
	There are no responses.	

Q15 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q16 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q1 Name of your Business:

Answered: 1 Skipped: 0

#	Responses	Date
1	Historical Preservation Society of Upper Township	10/13/2015 4:25 PM

Q2 Name of Respondent:

Answered: 1 Skipped: 0

#	Responses	Date
1	Ralph Cooper	10/13/2015 4:25 PM

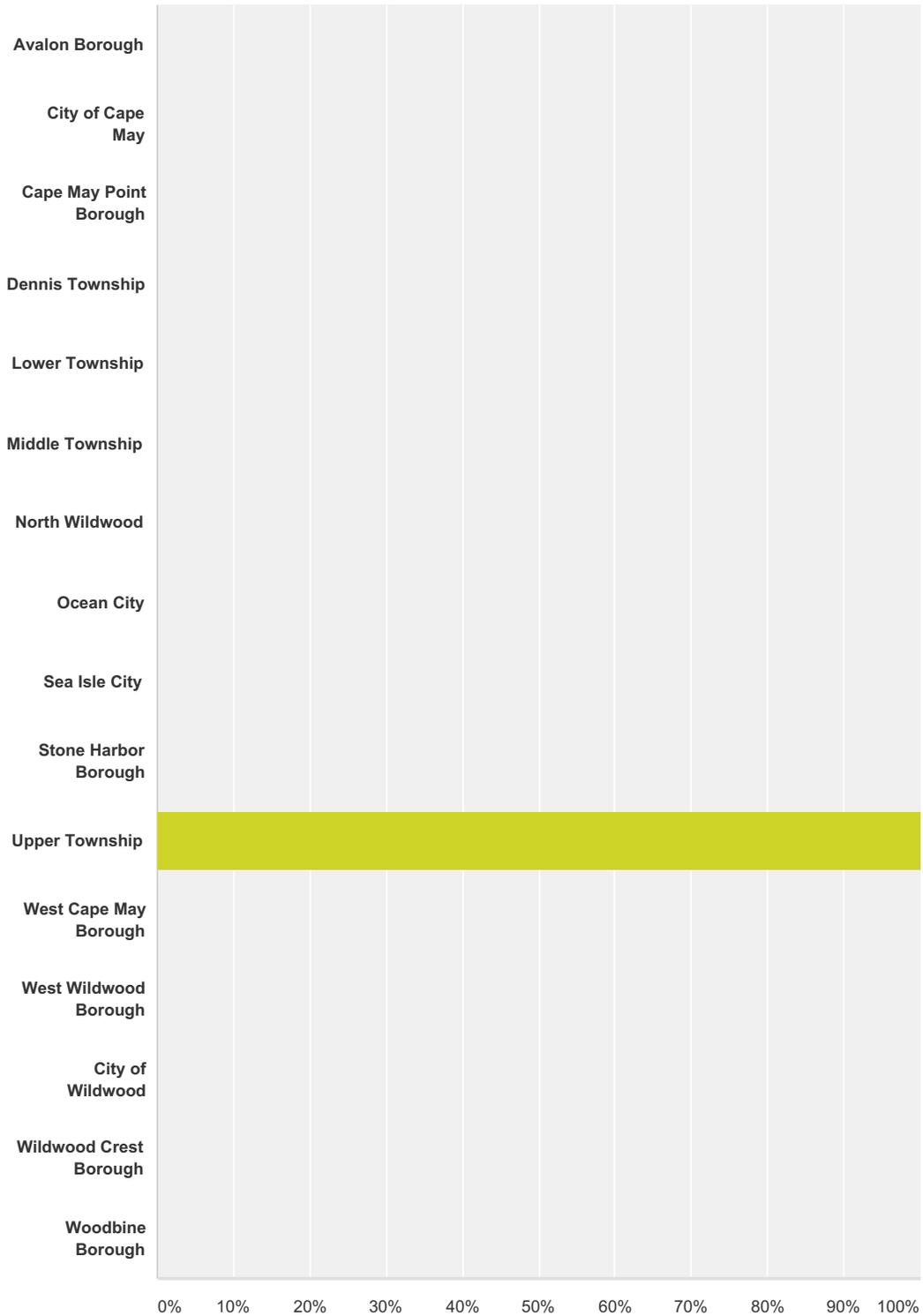
Q3 Contact information (email address or phone number) - optional:

Answered: 1 Skipped: 0

#	Responses	Date
1	UpperTwpHistory@yahoo.com	10/13/2015 4:25 PM

Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 1 Skipped: 0



Answer Choices	Responses
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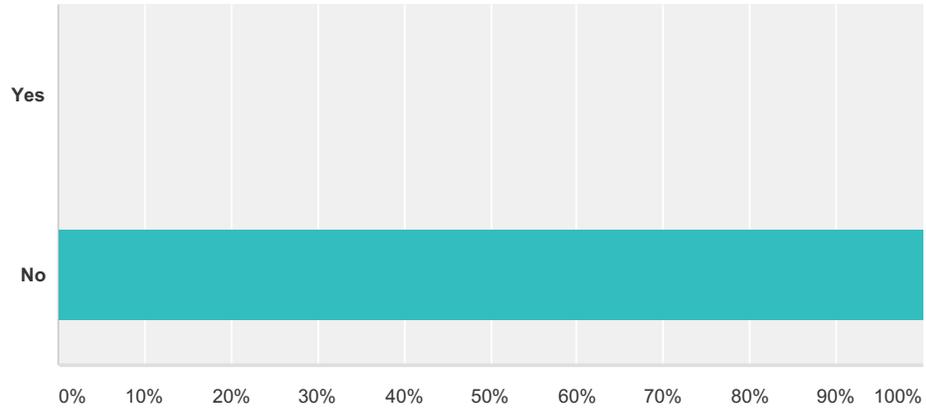
Cape May County HMP - Business/Commerce Survey

Avalon Borough	0.00%	0
City of Cape May	0.00%	0
Cape May Point Borough	0.00%	0
Dennis Township	0.00%	0
Lower Township	0.00%	0
Middle Township	0.00%	0
North Wildwood	0.00%	0
Ocean City	0.00%	0
Sea Isle City	0.00%	0
Stone Harbor Borough	0.00%	0
Upper Township	100.00%	1
West Cape May Borough	0.00%	0
West Wildwood Borough	0.00%	0
City of Wildwood	0.00%	0
Wildwood Crest Borough	0.00%	0
Woodbine Borough	0.00%	0
Total		1

#	Other (please specify)	Date
	There are no responses.	

Q5 Has your business been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

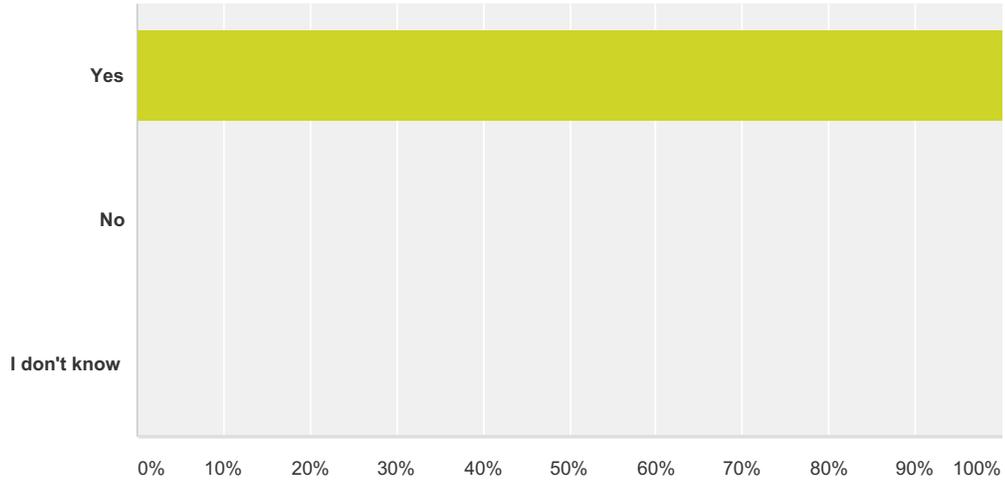


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
Total	1

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
	There are no responses.	

Q6 Do you believe that your facilities are disaster-resistant, or capable of withstanding a natural disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

Answered: 1 Skipped: 0

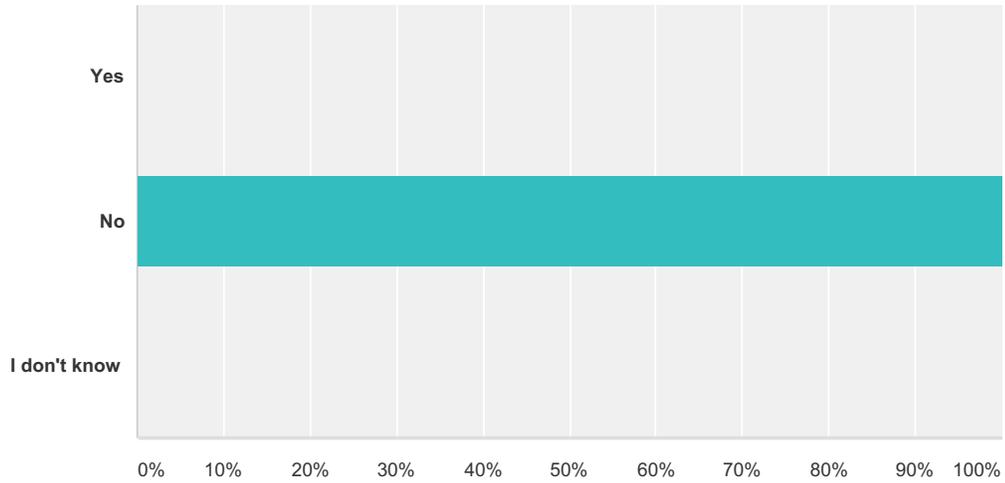


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards, and thus provides longterm support for your business and commerical needs?

Answered: 1 Skipped: 0

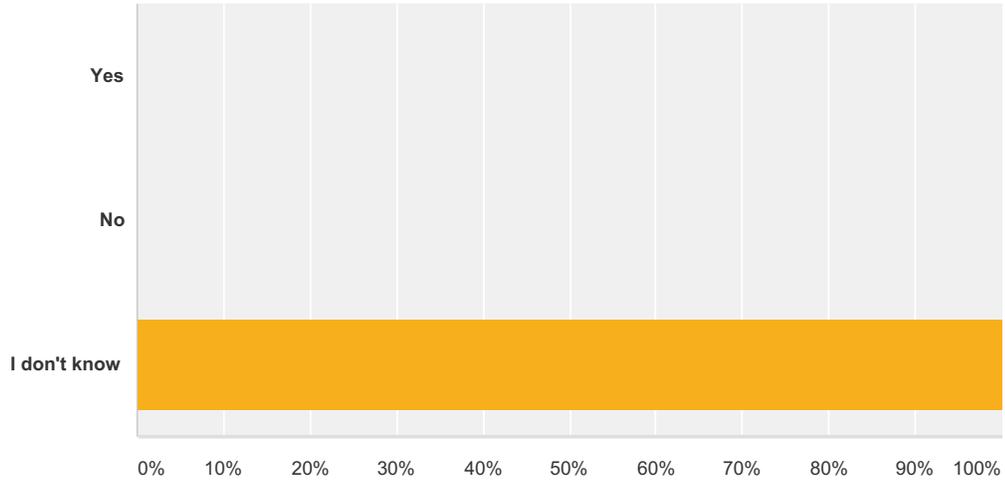


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your business and commercial needs?

Answered: 1 Skipped: 0

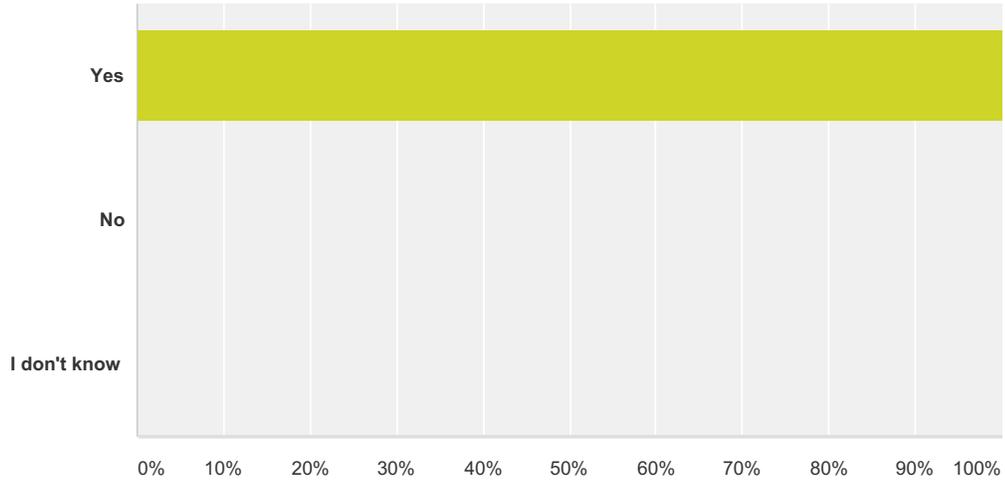


Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	Please explain	Date
	There are no responses.	

Q9 Do you believe that natural hazard risks (e.g. flood zones, coastal hazard zones, wildfire risk zones) are considered when developing or expanding commercial or industrial areas?

Answered: 1 Skipped: 0

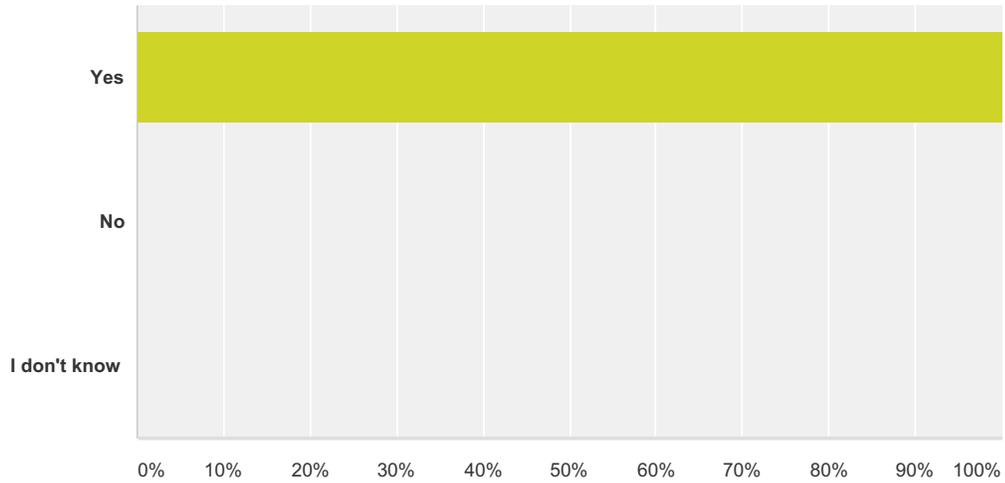


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q10 Do you believe that business organizations/associations, chambers of commerce, etc., are a valuable resource in helping business owners protect themselves pre-disaster, and/or recover post-disaster?

Answered: 1 Skipped: 0

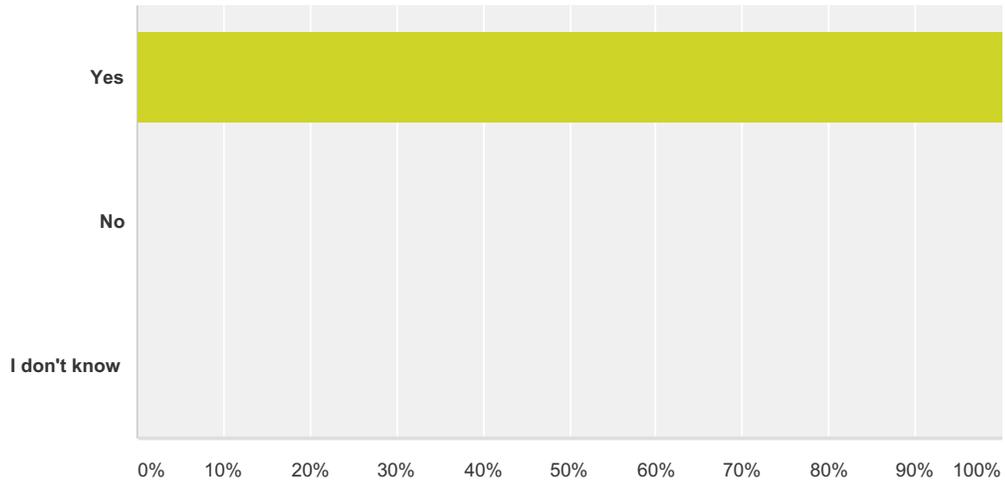


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q11 Do you believe that businesses are aware and take appropriate advantage of flood insurance and other risk management resources and programs to help protect them from losses, as well as to support recovery from disasters?

Answered: 1 Skipped: 0

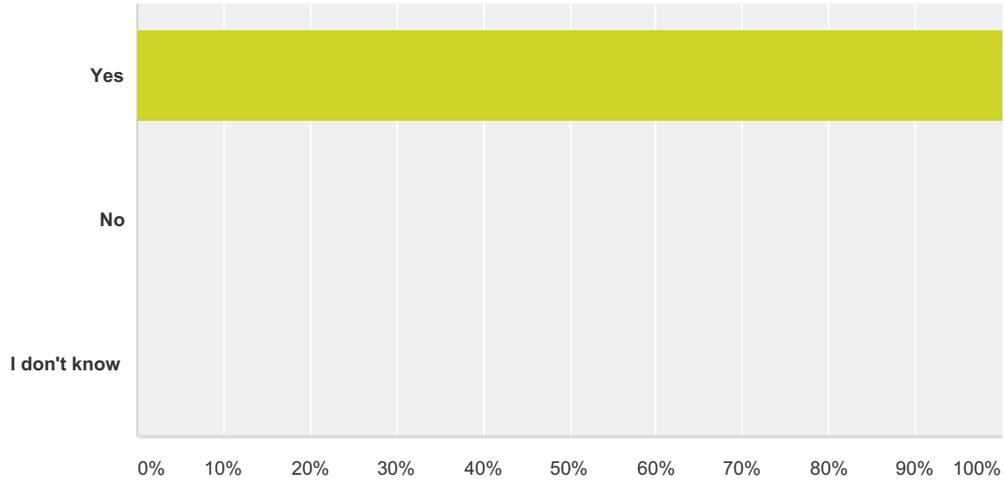


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q12 Do you believe that emergency planning, services, and equipment are adequate to manage and respond properly to natural disasters that may impact your business or commercial interests?

Answered: 1 Skipped: 0

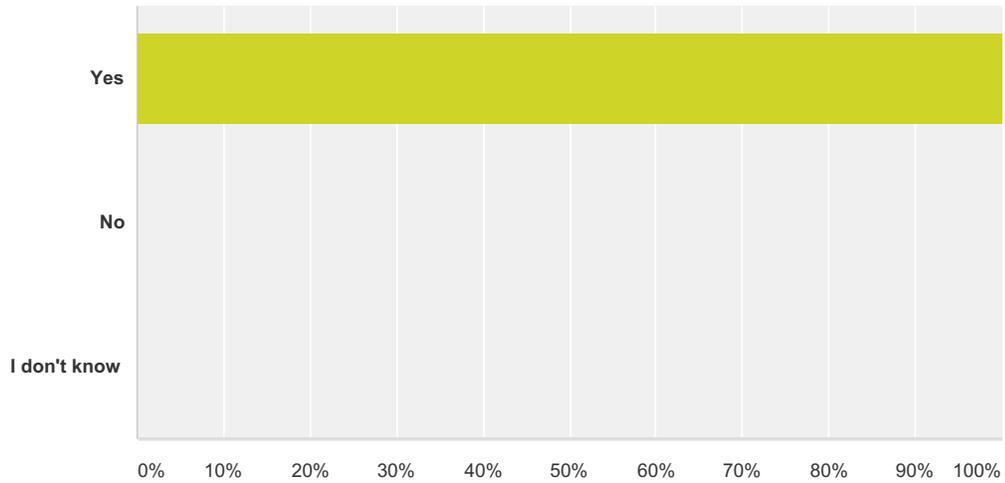


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q13 Do you believe that local government understands, supports, and possesses adequate resources for natural hazard risk reduction efforts in the community?

Answered: 1 Skipped: 0

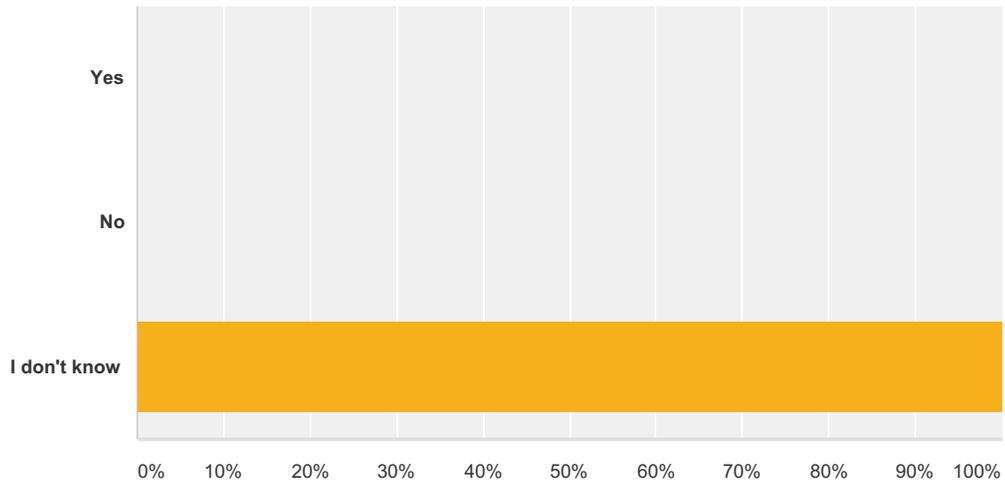


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q14 Is your business covered by a Continuity of Operations / Continuity of Government (COOP / COG) plan? COOP / COG plans examine an business's ability to perform minimum essential functions during any situation. COOP activities support the continuance of business functions, while COG activities support the continuance of business governance.

Answered: 1 Skipped: 0



Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	If "Yes", please explain.	Date
	There are no responses.	

Q15 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q16 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q1 Name of your EMS facility:

Answered: 1 Skipped: 0

#	Responses	Date
1	Test EMS	4/13/2016 9:15 AM

Q2 Name of Respondent:

Answered: 1 Skipped: 0

#	Responses	Date
1	me	4/13/2016 9:15 AM

Q3 Contact information (email address or phone number) - optional:

Answered: 1 Skipped: 0

#	Responses	Date
1	me	4/13/2016 9:15 AM

Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 1 Skipped: 0



Answer Choices	Responses
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Cape May County HMP - Emergency Medical Services Survey

Avalon Borough	100.00%	1
City of Cape May	0.00%	0
Cape May Point Borough	0.00%	0
Dennis Township	0.00%	0
Lower Township	0.00%	0
Middle Township	0.00%	0
North Wildwood	0.00%	0
Ocean City	0.00%	0
Sea Isle City	0.00%	0
Stone Harbor Borough	0.00%	0
Upper Township	0.00%	0
West Cape May Borough	0.00%	0
West Wildwood Borough	0.00%	0
City of Wildwood	0.00%	0
Wildwood Crest Borough	0.00%	0
Woodbine Borough	0.00%	0
Total		1

#	Other (please specify)	Date
	There are no responses.	

Q5 Has your EMS facility been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
Total	0

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
	There are no responses.	

Q6 Do you think that critical and essential facilities (incl. EMS facilities, hospitals and medical centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support EMS functions during and after natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as not to increase the need for EMS during hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support EMS functions during natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q12 Do you think that your EMS company works to inform your constituents of how they can better manage their risk to natural hazards?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q13 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to natural disasters in your community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q14 Do you think that local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q15 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	If "Yes", please explain.	Date
	There are no responses.	

Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q17 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Cape May County HMP - Firefighter Survey

Q1 Name of your fire department or district:

Answered: 1 Skipped: 0

#	Responses	Date
1	Wildwood Fire Dept	10/24/2015 2:05 PM

Q2 Name of respondent:

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q3 Contact information (email address or phone number) - optional:

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Cape May County HMP - Firefighter Survey

Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Avalon Borough	0.00% 0
City of Cape May	0.00% 0
Cape May Point Borough	0.00% 0
Dennis Township	0.00% 0
Lower Township	0.00% 0
Middle Township	0.00% 0
North Wildwood	0.00% 0
Ocean City	0.00% 0
Sea Isle City	0.00% 0
Stone Harbor Borough	0.00% 0
Upper Township	0.00% 0
West Cape May Borough	0.00% 0
West Wildwood Borough	0.00% 0
City of Wildwood	0.00% 0
Wildwood Crest Borough	0.00% 0
Woodbine Borough	0.00% 0
Total	0

#	Other (please specify)	Date
	There are no responses.	

Q5 Has your fire department been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
Total	0

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
	There are no responses.	

Q6 Do you think that critical and essential facilities (incl. fire departments, EMS, hospitals and medical centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support school functions after natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as not to increase the need for fire fighting services during hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support fire department functions during natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q12 Do you think that your department/fire district works to inform your constituents of how they can better manage their risk to natural hazards (e.g. proper use of portable heaters and generators, defensible space for wildfires, etc.)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q13 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to natural disasters in your community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q14 Do you think that local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q15 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of your organization's functions.

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	If "Yes", please explain.	Date
	There are no responses.	

Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q17 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q1 Name of your health care facility:

Answered: 1 Skipped: 0

#	Responses	Date
1	Test Hospital	4/13/2016 9:16 AM

Q2 Name of respondent:

Answered: 1 Skipped: 0

#	Responses	Date
1	Me	4/13/2016 9:16 AM

Q3 Contact information (email address or phone number) - optional:

Answered: 1 Skipped: 0

#	Responses	Date
1	me	4/13/2016 9:16 AM

Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 1 Skipped: 0



Answer Choices	Responses
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Cape May County HMP - Hospital and Health Care Provider Survey

Avalon Borough	100.00%	1
City of Cape May	0.00%	0
Cape May Point Borough	0.00%	0
Dennis Township	0.00%	0
Lower Township	0.00%	0
Middle Township	0.00%	0
North Wildwood	0.00%	0
Ocean City	0.00%	0
Sea Isle City	0.00%	0
Stone Harbor Borough	0.00%	0
Upper Township	0.00%	0
West Cape May Borough	0.00%	0
West Wildwood Borough	0.00%	0
City of Wildwood	0.00%	0
Wildwood Crest Borough	0.00%	0
Woodbine Borough	0.00%	0
Total		1

#	Other (please specify)	Date
	There are no responses.	

Q5 Have your facilities been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
Total	0

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
	There are no responses.	

Q6 Do you think that critical and essential facilities (incl. hospitals and medical centers, EMS facilities, schools, etc.) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your facility's health care functions during and after natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as not to increase the need for health care services during hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support hospital functions during natural hazard events?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services)?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q12 Do you think that your organization works to inform your constituents of how they can better manage their risk to natural hazards?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
Not applicable	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q13 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to natural disasters in your community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q14 Do you think that local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	Please explain	Date
	There are no responses.	

Q15 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

Answered: 0 Skipped: 1

! No matching responses.

Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
Total	0

#	If "Yes", please explain.	Date
	There are no responses.	

Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q17 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Q1 Name of your police department or law enforcement agency:

Answered: 1 Skipped: 0

#	Responses	Date
1	NJ State Police	10/14/2015 3:07 PM

Q2 Name of Respondent:

Answered: 1 Skipped: 0

#	Responses	Date
1	Lt. Doug Pearson #5085	10/14/2015 3:07 PM

Q3 Contact information (email address or phone number) - optional:

Answered: 1 Skipped: 0

#	Responses	Date
1	Lpp5085@gw.njsp.org	10/14/2015 3:07 PM

Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 1 Skipped: 0



Answer Choices	Responses
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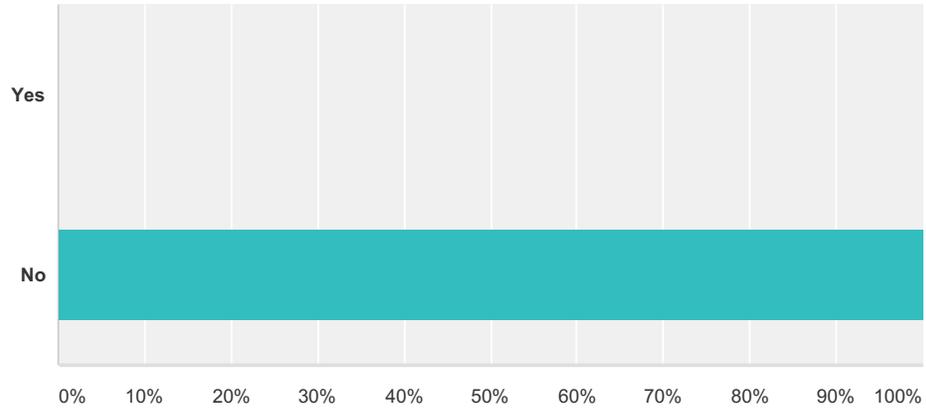
Cape May County HMP - Law Enforcement Survey

Avalon Borough	0.00%	0
City of Cape May	0.00%	0
Cape May Point Borough	0.00%	0
Dennis Township	0.00%	0
Lower Township	0.00%	0
Middle Township	0.00%	0
North Wildwood	0.00%	0
Ocean City	0.00%	0
Sea Isle City	0.00%	0
Stone Harbor Borough	0.00%	0
Upper Township	0.00%	0
West Cape May Borough	0.00%	0
West Wildwood Borough	0.00%	0
City of Wildwood	0.00%	0
Wildwood Crest Borough	0.00%	0
Woodbine Borough	100.00%	1
Total		1

#	Other (please specify)	Date
1	We also cover Upper and Dennis Twp.'s	10/14/2015 3:07 PM

Q5 Have your facilities been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

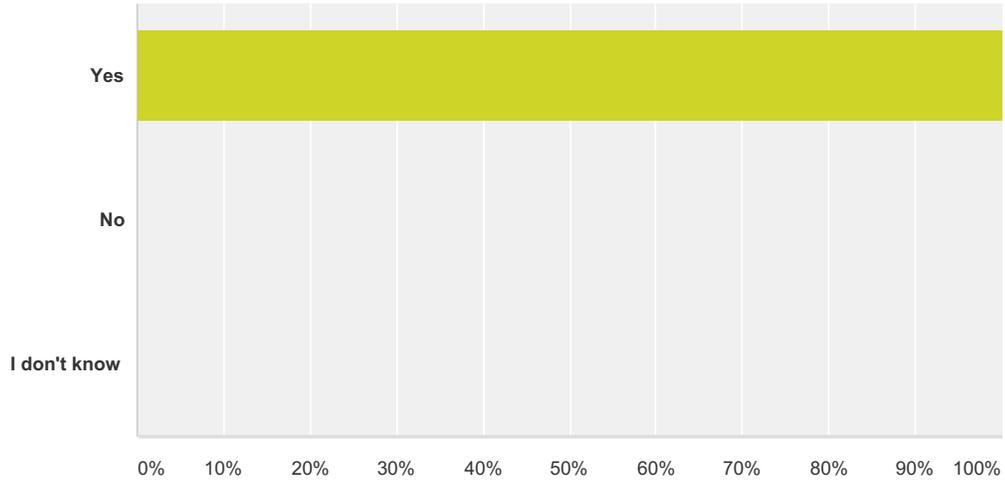


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
Total	1

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
	There are no responses.	

Q6 Do you think that critical and essential facilities (incl. police stations, jails and detention centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

Answered: 1 Skipped: 0

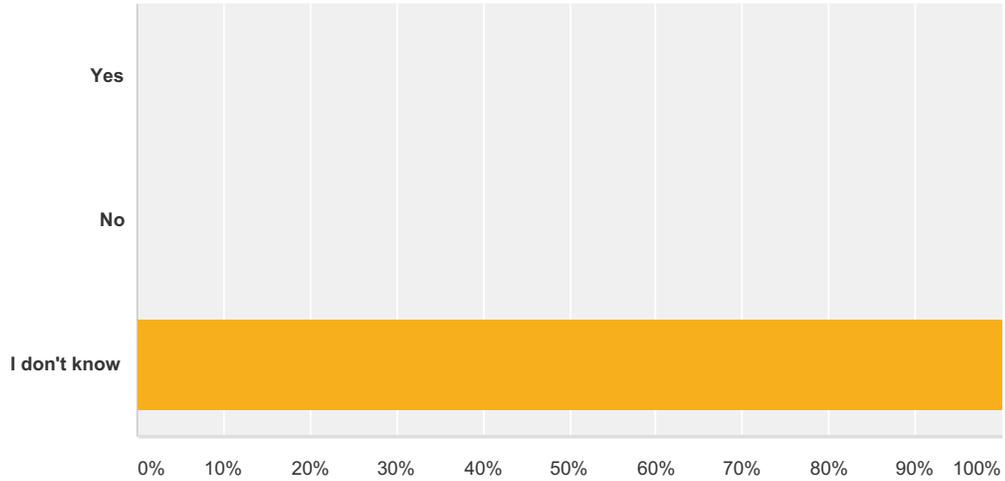


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

Answered: 1 Skipped: 0

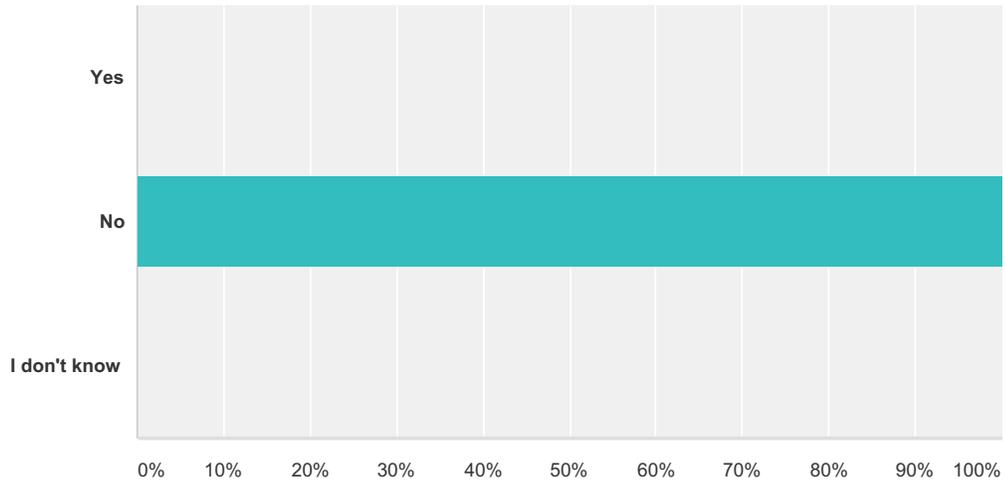


Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	Please explain	Date
1	Difficult to say fully. We have mostly one lane roadways and many border, or are near the water. In severe flooding, we may find many of them impassable or unusable.	10/14/2015 3:07 PM

Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support law enforcement functions during and after natural hazard events?

Answered: 1 Skipped: 0

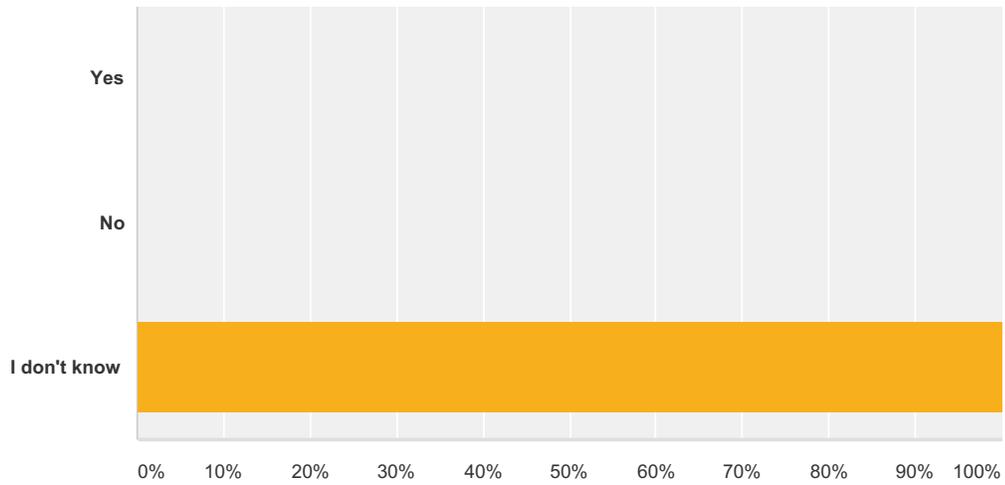


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
Total	1

#	Please explain	Date
1	Radio communications are fine but in the event they went down, cell phone reception for some subscribers is terrible.	10/14/2015 3:17 PM

Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as not to increase the need for law enforcement and police protective services during hazard events?

Answered: 1 Skipped: 0

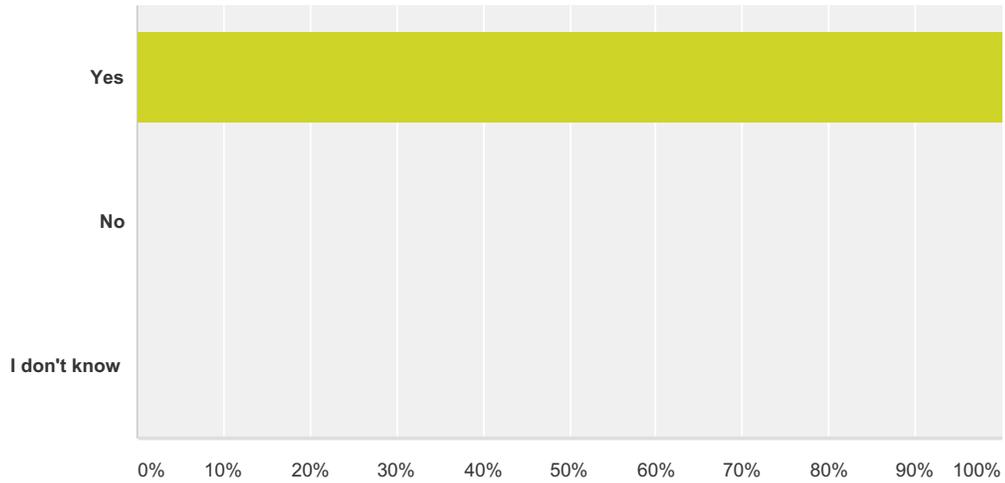


Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	Please explain	Date
	There are no responses.	

Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support law enforcement and police protective service functions during natural hazard events?

Answered: 1 Skipped: 0

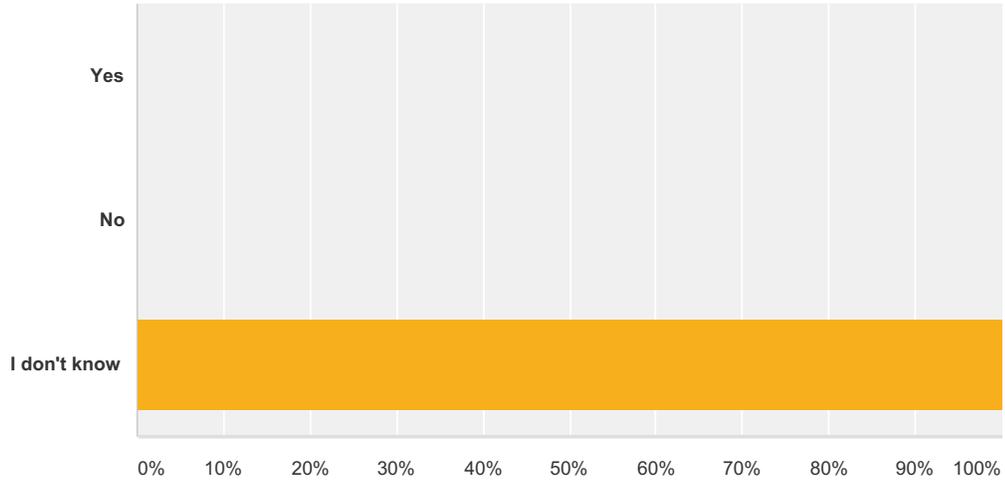


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services)?

Answered: 1 Skipped: 0

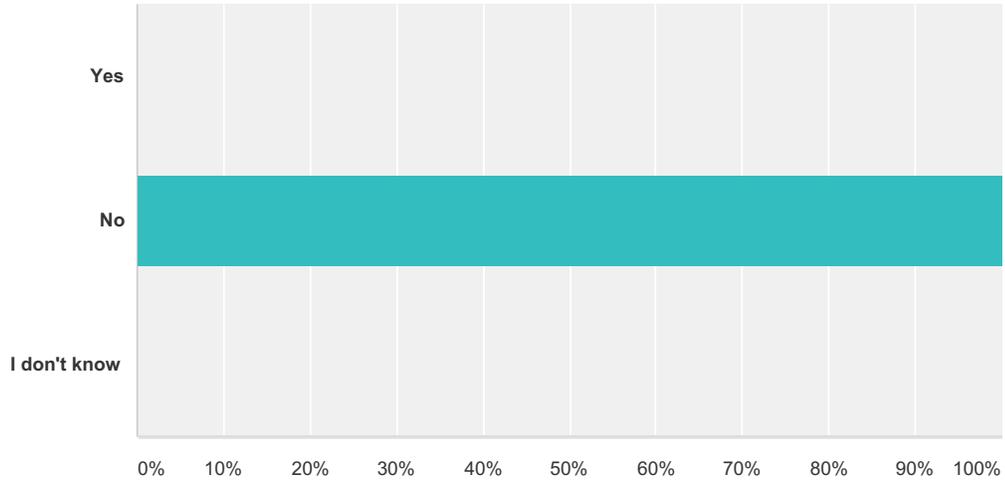


Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	Please explain	Date
1	Not sure the extent of what residents know in regards to these three categories (awareness, understanding, taking advantage of).	10/14/2015 3:17 PM

Q12 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to natural disasters in your community?

Answered: 1 Skipped: 0

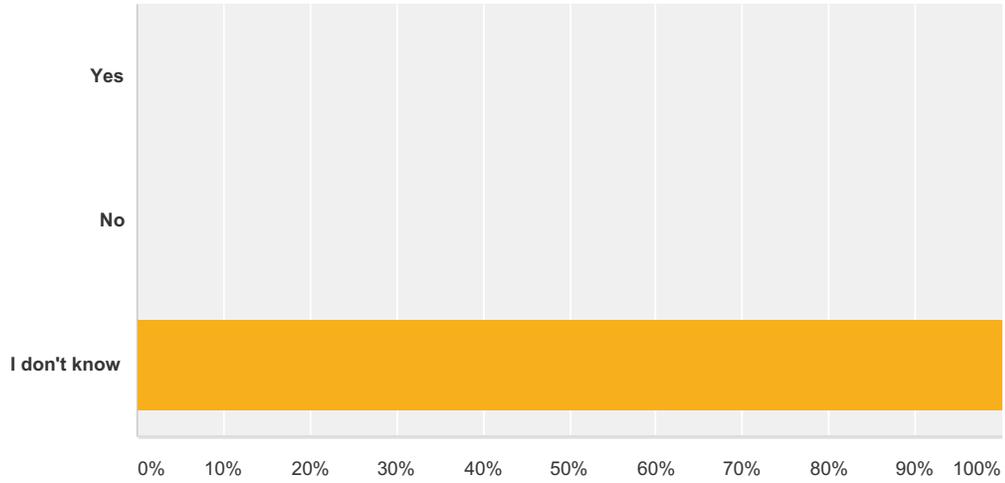


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
Total	1

#	Please explain	Date
1	As far as we are concerned, definitely not equipment. We would be limited in our ability to respond due to the lack of four wheel drive or other vehicles that could access more remote areas or highly flooded or heaily snowed in areas.	10/14/2015 3:17 PM

Q13 Do you think that local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 1 Skipped: 0

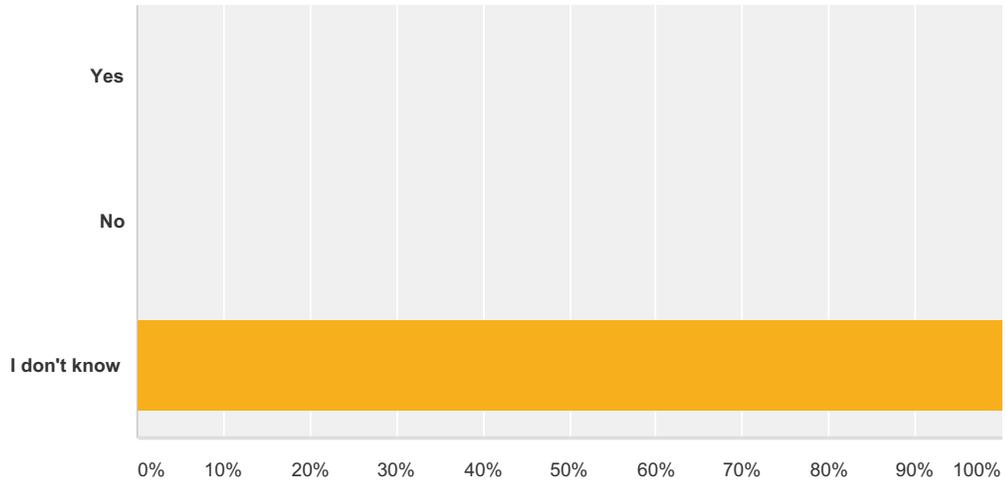


Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	Please explain	Date
1	Not sure the extent of all their resources	10/14/2015 3:17 PM

Q14 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of your organization's functions.

Answered: 1 Skipped: 0



Answer Choices	Responses
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
Total	1

#	If "Yes", please explain.	Date
	There are no responses.	

Q15 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 1 Skipped: 0

#	Responses	Date
1	No	10/14/2015 3:17 PM

Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 1 Skipped: 0

#	Responses	Date
1	No	10/14/2015 3:17 PM

Q17 Please provide any additional comments here. Thank you!

Answered: 0 Skipped: 1

#	Responses	Date
	There are no responses.	

Cape May County HMP - Utility Survey

Q1 Name of your utility:

Answered: 1 Skipped: 0

#	Responses	Date
1	Atlantic City Electric, Pepco Holdings Inc.	10/9/2015 11:36 AM

Q2 Name of respondent:

Answered: 1 Skipped: 0

#	Responses	Date
1	Ronnie Town	10/9/2015 11:36 AM

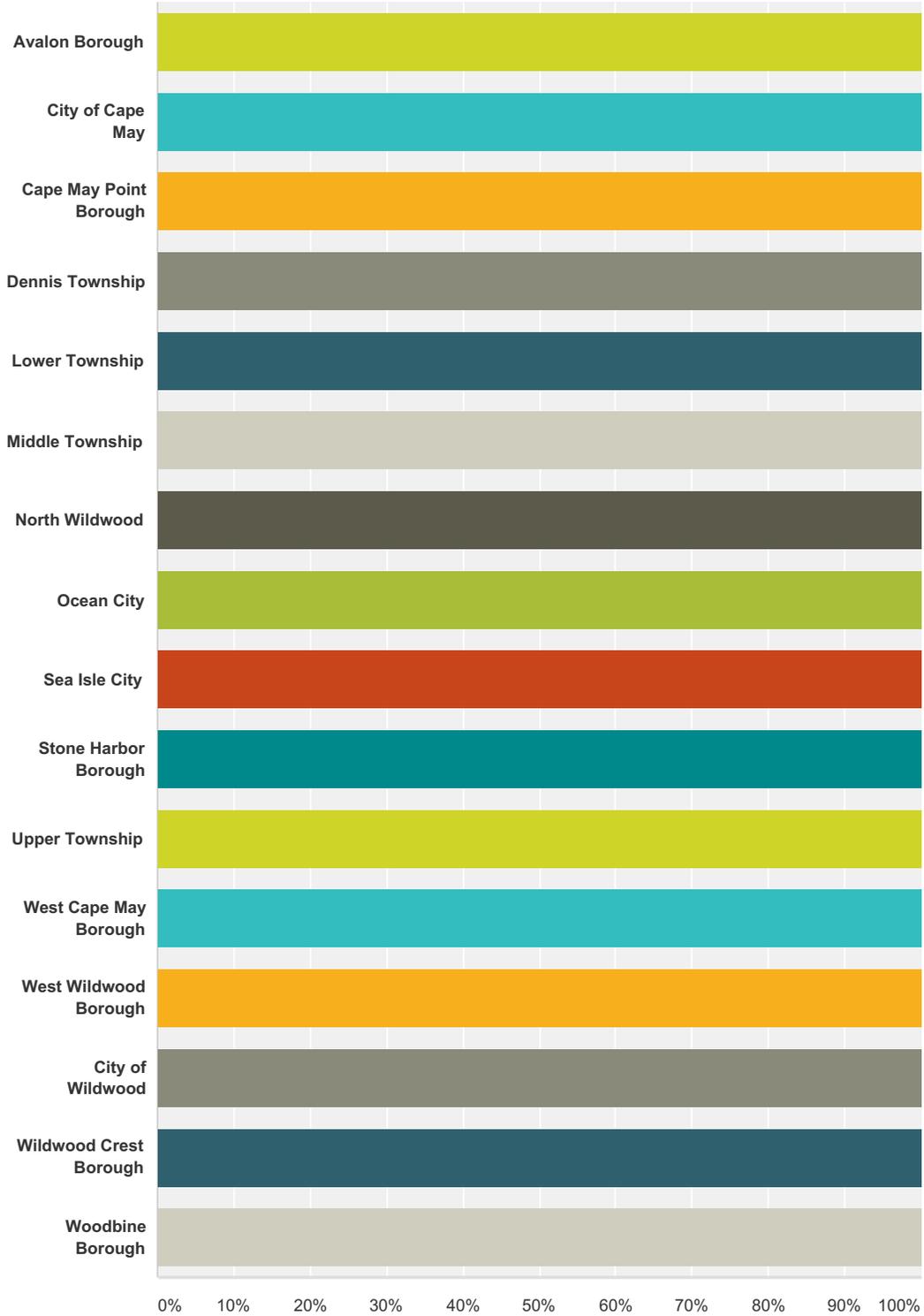
Q3 Contact information (email address or phone number) - optional:

Answered: 1 Skipped: 0

#	Responses	Date
1	veronica.town@atlanticcityelectric.com	10/9/2015 11:36 AM

Q4 Please identify the location of your facility(ies) and or primary service area (you may pick more than one choice):

Answered: 1 Skipped: 0



Answer Choices	Responses
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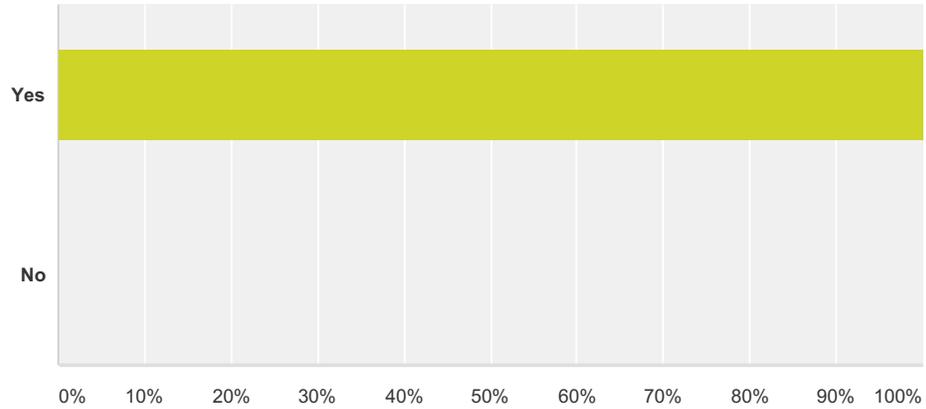
Cape May County HMP - Utility Survey

Avalon Borough	100.00%	1
City of Cape May	100.00%	1
Cape May Point Borough	100.00%	1
Dennis Township	100.00%	1
Lower Township	100.00%	1
Middle Township	100.00%	1
North Wildwood	100.00%	1
Ocean City	100.00%	1
Sea Isle City	100.00%	1
Stone Harbor Borough	100.00%	1
Upper Township	100.00%	1
West Cape May Borough	100.00%	1
West Wildwood Borough	100.00%	1
City of Wildwood	100.00%	1
Wildwood Crest Borough	100.00%	1
Woodbine Borough	100.00%	1
Total Respondents: 1		

#	Other (please specify)	Date
	There are no responses.	

Q5 Has your utility been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

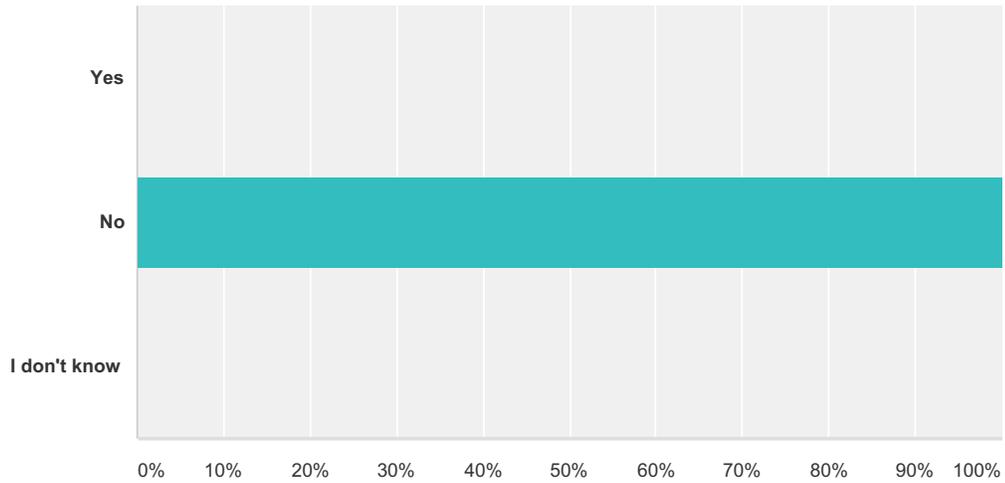


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
Total	1

#	If you answered "YES", please identify the events and provide a brief description of the damages or loss of service	Date
1	Thunderstorms, Hurricanes, Nor'easterns, blizzards have damaged various types of our equipment including poles, transformers, insulators, wire, etc.	10/9/2015 11:36 AM

Q6 Do you believe that your facilities and infrastructure are disaster-resistant (e.g. are properly located, constructed, and protected from damage from natural hazards)?

Answered: 1 Skipped: 0

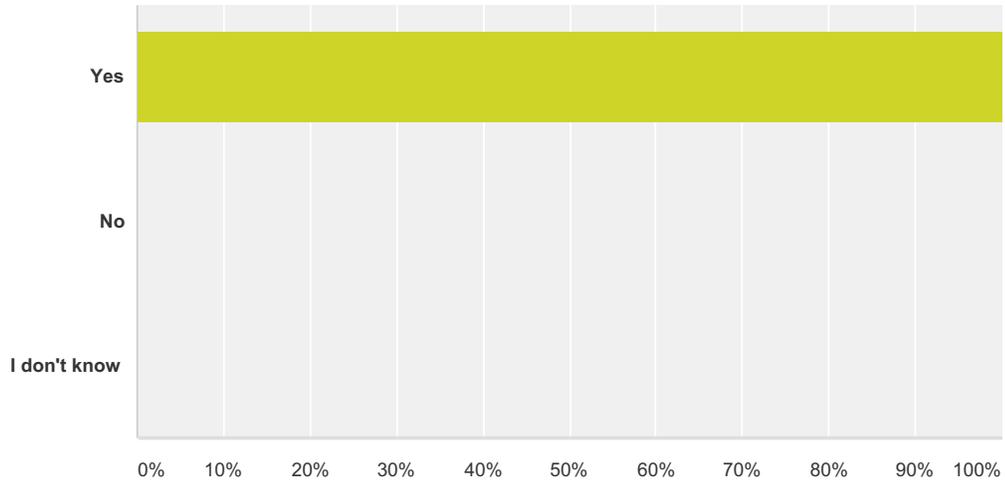


Answer Choices	Responses
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
Total	1

#	Please explain	Date
1	We have some equipment that helps with lightning protection. We are currently replacing wood with steel transmission poles to withstand 120mph winds.	10/9/2015 11:36 AM

Q7 Do you believe that your facilities and infrastructure have sufficient redundancy and/or are sufficiently networked to provide a minimal level of service to your customers (esp. critical and essential services such as police, fire, hospitals) in the event that you suffer damage/loss to your equipment?

Answered: 1 Skipped: 0

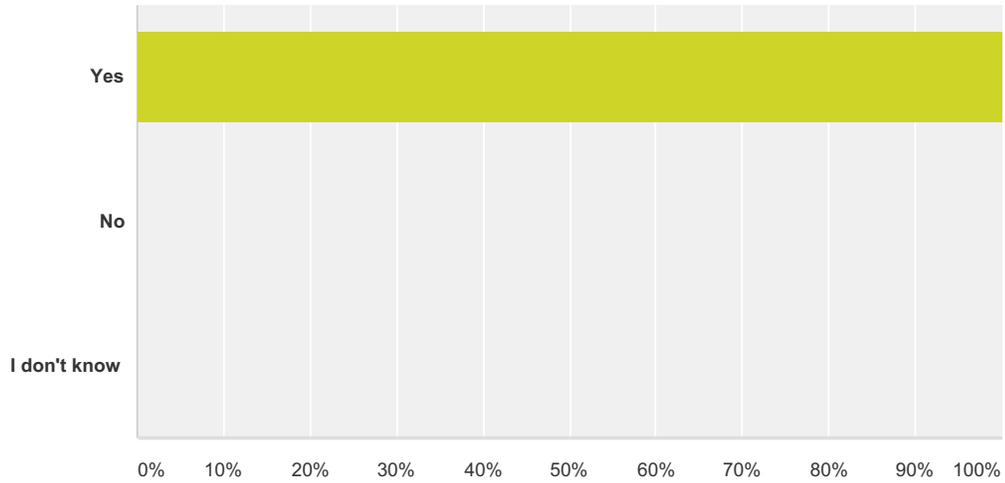


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
1	Our facility at Cape May County House has back up systems and back up generator. We do have a reocation plan in place.	10/9/2015 11:36 AM

Q8 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as to reduce their reliance on your services during and after hazard events?

Answered: 1 Skipped: 0

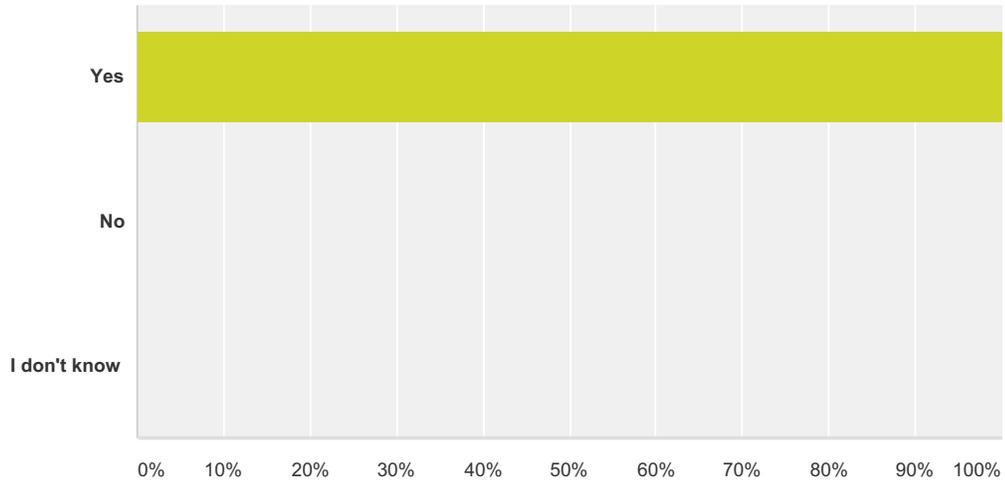


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
1	We reach out with our speakers bureau presentations to discuss how to prepare, we have press releases, bill inserts and website on talking how to prepare for our customers.	10/9/2015 11:39 AM

Q9 Do you think that announcements of utility outages and service restoration schedules are sufficiently accurate and available to support the needs of emergency management, as well as owners/operators of critical and essential facilities?

Answered: 1 Skipped: 0

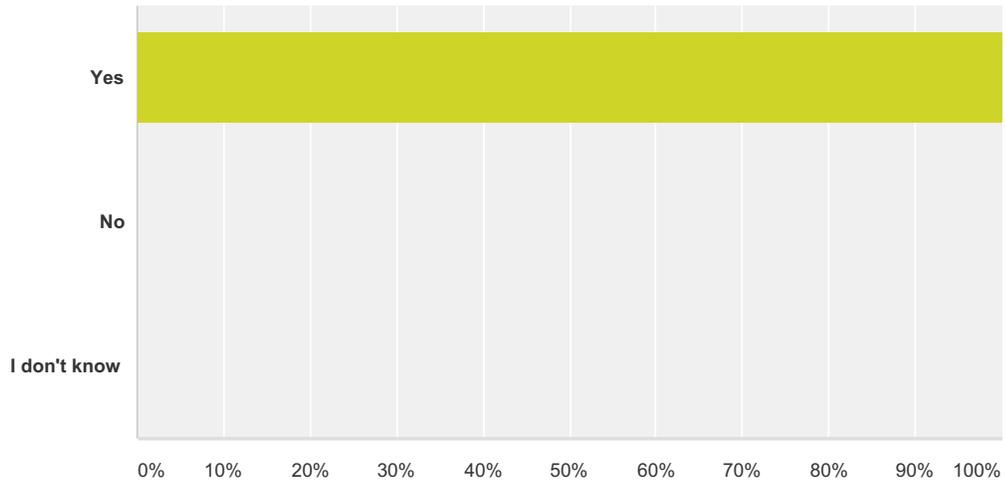


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q10 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services)?

Answered: 1 Skipped: 0

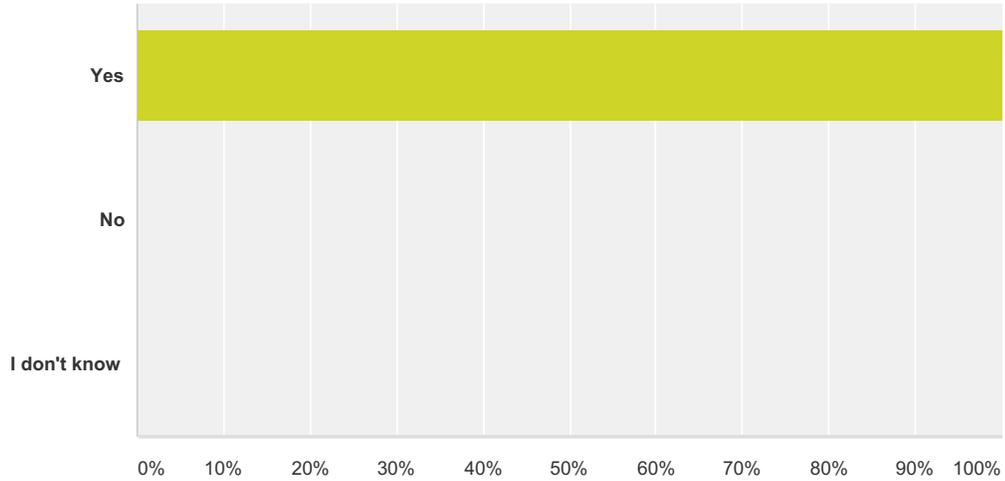


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q11 Do you think that vegetation management programs (e.g. tree trimming and removal) are sufficient to manage the risk of utility outages during natural hazard events?

Answered: 1 Skipped: 0

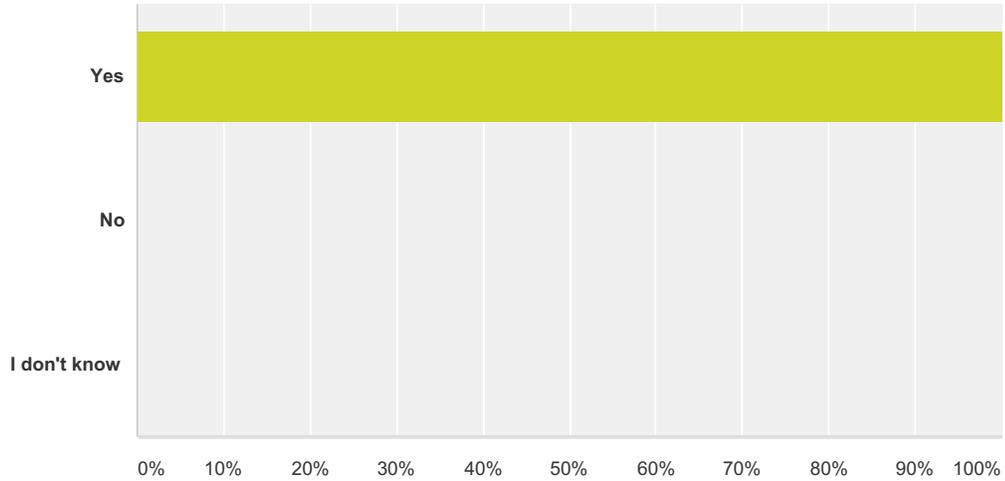


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q12 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to natural disasters in your community?

Answered: 1 Skipped: 0

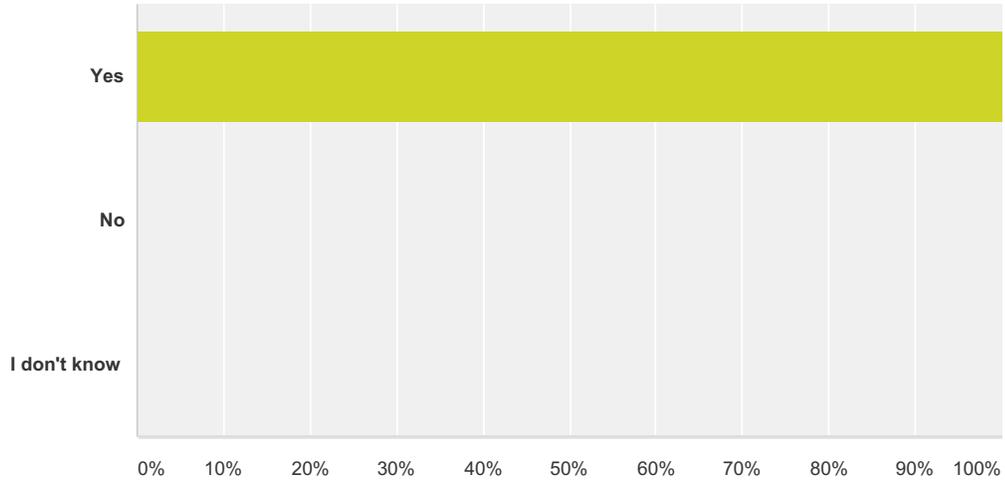


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q13 Do you think that local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 1 Skipped: 0

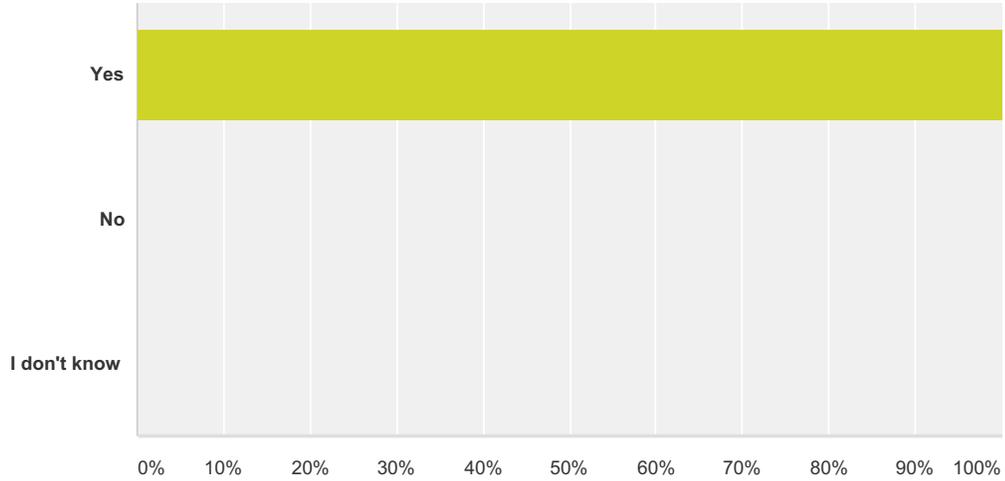


Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	Please explain	Date
	There are no responses.	

Q14 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of your organization's functions.

Answered: 1 Skipped: 0



Answer Choices	Responses
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
Total	1

#	If "Yes", please explain.	Date
1	We have a Business Continuity Plan in place and have drills throughout the years to address emergencies and diasters.	10/9/2015 11:39 AM

Q15 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 1 Skipped: 0

#	Responses	Date
1	Our transmission projects replacing wood with steel poles, reconducturing our wire, pole replacement, upgrading our substations to flood elevations.	10/9/2015 11:40 AM

Q16 Do you have any other comments, questions, or concerns?

Answered: 1 Skipped: 0

#	Responses	Date
1	No	10/9/2015 11:40 AM



APPENDIX E MITIGATION ACTION WORKSHEET TEMPLATE

This appendix includes the template and guidance provided to all plan participants to complete their municipal annex for inclusion in the Cape May County Hazard Mitigation update. All municipal annexes may be found in Section 9.



Municipal Annex Completion Instructions

The following are instructions for the completion of the municipal (jurisdictional) annex template that will need to be completed by each community participating in the Cape May County Hazard Mitigation Plan. The purpose of these instructions is to guide each planning partner in the preparation of the information required for Disaster Mitigation Act (DMA) compliance. Each municipality should review and complete as much of the information as possible.

Important: While the format of this annex has been designed to meet certain FEMA requirements, it is YOURS to complete as you see fit. This is meant to provide a framework to help you build and maintain a useful, contemporary document to guide and support hazard risk management and reduction in your community. We encourage you to add new information as it becomes available, and to keep it up-to-date.

Any questions on what is required or further assistance with annex completion can be directed to your assigned Tetra Tech representative, or:

Jonathan Raser, CFM
(973) 630-8042

Tetra Tech, Inc.
jonathan.raser@tetrattech.com

9.X.1 Hazard Mitigation Plan Point of Contact

Provide contact information for your jurisdiction's primary and alternate points of contact for the hazard mitigation plan going forward (plan implementation and annual review/plan maintenance).

9.X.2 Municipal Profile

Please provide a short (2-3 paragraph) description of your municipality, to include as appropriate:

- Location – Describe where it is located in the County, identify any major transportation routes
- Size (area), population, urban/suburban/rural
- Relevant Physical Features – Are there any physical features that influence it's vulnerability to natural hazards (e.g. rivers, dams, coastal risk areas, large reservoirs, steep slopes, etc.)
- Hamlets and Census Named Places –Please identify any that are part of your municipality.

Growth/Development Trends

Please identify any significant development or redevelopment that occurred in the municipality over the past five years, as well as known or anticipated future development in the next five (5) years.

If there has been no recent development, and/or no known or anticipated new development, please state so.

9.X.3 Natural Hazard Event History Specific to the Municipality

Identify any natural hazard events that have caused measurable impact to your community. "Measurable impact" means that the event required response and incurred expenses and/or losses beyond usual levels. Please do not limit this to only declared disasters that impacted your community. Include the date of the event and the known or *estimated* dollar amount of damage it caused, and summarize the types of damages or losses (e.g. numbers and types of structures or infrastructure damaged, extent and duration of utility outages, types of PA reimbursement requested). For more detail, refer to the Draft Risk Assessment (Hazard Profiles) in Section 5.4 of the Plan.

Sources of damage information could include:





- Preliminary damage estimates (PDA's) filed by your community to County and NYSEMO
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (i.e., safety elements, emergency response plans)

Do not be afraid to make an estimate based on your interpretation of the risk assessment, and personal knowledge of past events. Rest assured that this information is not readily available at the local level, so estimations are completely acceptable. If you are making an estimate, indicate: “damages estimated at ___”. If you are not comfortable making an estimate, then just state that “information not available at this time”.

9.X.4 Hazard Vulnerabilities and Ranking

Hazard Risk/Vulnerability Risk Ranking

This table will be completed for you. If you disagree with the hazard ranking, please feel free to edit however we would appreciate if you include a brief rationale for your ranking change.

National Flood Insurance Program (NFIP) Summary

This table has been/will be completed for you.

Critical Facilities

This table will be completed for you. Please note that it is based primarily on our vulnerability assessment modeling. If you disagree with any of the information presented, please discuss with Tetra Tech.

Other Vulnerabilities Identified by Municipality

We may have identified certain vulnerabilities already identified by the municipality or otherwise, HOWEVER please feel free to add others as you see fit.

Please note that these vulnerabilities suggest the need for corresponding mitigation strategies which could be actual projects, or further investigation or studies to identify appropriate, feasible solutions.

9.X.5 Capability Assessment

These tables have been populated based on the Capability Assessment worksheet provided to your community previously.

Please note that if you participate in the National Flood Insurance Program (NFIP), and you all do, you must have a Flood Damage Prevention Ordinance (FDPO), and you have a designated NFIP Floodplain Administrator (FPA) which is identified in your FDPO under “Administration”.

Community Classifications

Your code enforcement official may be able to provide your BCEGS and Public Protection classifications. At this time we are not aware of any Westchester County municipalities participating in CRS, except for the Village of Scarsdale.



National Flood Insurance Program

This section has been/will be developed based on your community's response to the NFIP Floodplain Administrator's Survey, and/or a brief interview conducted by Tetra Tech with your NFIP FPA.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

Tetra Tech may have included short narratives where we are aware of such existing or future plan integrations. Feel free to identify others, using this short narrative format, which typically fall under the general categories of:

- Budgets and Funding Sources
- Planning (e.g. Land Use, Emergency Management, Stormwater)
- Outreach and Education
- Ordinances/Permitting/Enforcement
- Zoning/Site Plan Review
- Administrative, including job descriptions

9.X.6 Mitigation Strategy and Prioritization

Past Mitigation Initiative Status

If your community had a prior mitigation identified in a FEMA-approved hazard mitigation plan, the table in this section will identify progress. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization.

Past Mitigation Activity

Please identify any mitigation projects and/or initiatives have been completed in the past, or are ongoing, other than those identified in the Past Mitigation Initiative Status table for those communities with a prior mitigation plan. FEMA sees a pro-active community as a good risk to receive Federal mitigation grant money.

Proposed Hazard Mitigation Initiatives for the Plan

Your draft mitigation strategy has been developed from the following sources:

- Mitigation projects identified by the municipality during the planning process.
- Projects or initiatives being carried forward from a prior hazard mitigation plan, modified and updated as appropriate.
- Mitigation projects that the municipality has already applied for, or considered applying for, grant funding.
- Identified vulnerabilities that are begging for an appropriate mitigation action.
- General initiatives that we encourage all communities to consider including and amending to provide further details (e.g. specific locations, specific methods of outreach, etc.). These may include County-led initiatives that the municipalities are encouraged to support and/or participate in.



You are instructed to add to and amend your mitigation strategy as you see fit. All fields should be completed, working with the notes and instructions at the end of the table.

Some of these actions are, or may be, appropriate for documentation on Action Worksheets, and Tetra Tech may have provided one or more draft Action Worksheets. Instructions for the completion of the Action Worksheets are included with each worksheet.

Hazards Mitigated:

The following are the natural hazards of concern being specifically addressed in this HMP Update:

- Coastal Erosion
- Drought
- Earthquake
- Extreme Temperatures
- Flooding (riverine, flash, coastal, urban/stormwater, dam failure)
- Land Failure (land slide)
- Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)
- Severe Winter Storm (heavy snow, blizzards, ice storms)
- Wildfire

Goals: Please insert the goals that would be met if the action/project is implemented.

Goal 1. Protect Life and Property

Goal 2. Increase Public Awareness and Preparedness of Natural and Man-Made Hazards and their Risks

Goal 3. Promote Sustainability (and Continuity of Operations and Government)

Goal 4. Enhance Disaster Preparedness, Response and Recovery

Goal 5. Protect Open Space, the Environment and Natural Resources

Goal 6. Promote Partnerships

Costs and Benefits:

Please use the following guidance when identifying the costs and benefits of your projects.

Costs:

If known, or if you can make an educated guess, please provide an estimate of the total cost of the project. The cost should include preliminary engineering, engineering, design, construction and maintenance costs.

Otherwise please use the following ranges for the project:

- Low: Less than \$10,000
- Medium: \$10,000 to \$100,000
- High: Greater than \$100,000

Benefits:

The mitigation benefits of the project are future damages and losses that would be eliminated and/or reduced by implementing the proposed mitigation project. Please identify the types of benefits associated



with the project (it is unlikely you will be able to estimate the \$\$ value of the benefits at this time), using the following general categories of avoidable or reducible damages:

- Casualties: deaths, injuries, and illnesses;
- Physical Damages: private structures, public structures, infrastructure, contents, landscaping, site contamination, vehicles, and equipment;
- Loss of Service or Function: displacement costs, loss of rental income, loss of business income, lost wages, disruption and clean-up time of residents, loss of public services, loss of utility services, and the impact of road and/or bridge closures;
- Emergency Management: costs for emergency operations centers, evacuations and rescues, public safety and protective services, security, temporary protective measures, and debris removal and cleanup.

Mitigation Action Type:

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

Prioritization of Mitigation Strategy

Complete this table to help evaluate and prioritize each mitigation action being considered by your municipality. Please use these 14 criteria to assist in evaluating and prioritizing new mitigation actions identified. Specifically, for each new mitigation action, assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria in the provided table, defined as follows:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

FEMA is looking also for a brief explanation of your rationale for picking the rank you have assigned to each criteria.

Use the numerical results of this exercise to help prioritize your actions as “Low”, “Medium” or “High” priority. Your municipality may recognize other factors or considerations that affect your overall prioritization; these should be identified in narrative in the Priority field of the worksheet.

The 14 evaluation/prioritization criteria are:



Appendix E: Municipal Annex Instructions and Tempalte

1. Life Safety – How effective will the action be at protecting lives and preventing injuries?
2. Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
3. Cost-Effectiveness – Are the costs to implement the project or initiative commensurate with the benefits achieved?
4. Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.
5. Political – Is there overall public support for the mitigation action? Is there the political will to support it?
6. Legal – Does the jurisdiction have the authority to implement the action?
7. Fiscal - Can the project be funded under existing program budgets (i.e., is this initiative currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?
8. Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?
9. Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
10. Administrative – Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?
11. Multi-hazard – Does the action reduce the risk to multiple hazards?
12. Timeline - Can the action be completed in less than 5 years (within our planning horizon)?
13. Local Champion – Is there a strong advocate for the action or project among the jurisdiction’s staff, governing body, or committees that will support the action’s implementation?
14. Other Local Objectives – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?



APPENDIX F FEMA WORKSHEETS

This appendix includes FEMA Local Mitigation Planning Handbook (March 2013) guidance worksheets to facilitate plan maintenance and review by the Cape May County planning partnership.

Mitigation Planning Team Worksheet

Use this worksheet to identify partner organizations to invite to participate on the planning team. Some organizations do not need to be involved in every decision of the planning process but are stakeholders that require outreach and involvement during the planning process. Revise the list of general partners below to reflect the organizations in your community. Mark which organizations will be invited to participate on the planning team and which will be involved through stakeholder outreach activities.

Planning Team – The core group responsible for making decisions, guiding the planning process, and agreeing upon the final contents of the plan

Stakeholders – Individuals or groups that affect or can be affected by a mitigation action or policy

Partner Organization	Planning Team	Stakeholder	Notes
Local Agencies			
Building Code Enforcement			
City Management/County Administration			
Emergency Management			
Fire Department/District			
Floodplain Administration			
Geographic Information Systems			
Parks and Recreation			
Planning/Community Development			
Public Works			
Stormwater Management			
Transportation (Roads and Bridges)			
City Council/Board of Commissioners			
Planning Commission			
Planning/Community Development			
Regional/Metropolitan Planning Organization(s)			
City/County Attorney's Office			
Economic Development Agency			
Local Emergency Planning Committee			
Police/Sheriff's Department			
Sanitation Department			
Tax Assessor's Office			
Special Districts and Authorities			
Airport, Seaport Authorities			
Fire Control District			
Flood Control District			
School District(s)			
Transit Authority			
Utility Districts			

Worksheet 2.1

Mitigation Planning Team Worksheet

Partner Organization	Planning Team	Stakeholder	Notes
Non-Governmental Organizations			
American Red Cross			
Chamber of Commerce			
Community/Faith-Based Organizations			
Environmental Organizations			
Homeowners Associations			
Neighborhood/Community Organizations			
Utility Companies			
State Agencies			
State Emergency Management Agency			
State Dam Safety			
State Department of Transportation			
State Fire and Forestry Agency			
State Geological Survey			
State Water Resources Agency			
State National Flood Insurance Program Coordinator			
State Planning Office			
Federal Agencies			
Federal Emergency Management Agency			
Land Management Agencies (USFS/NPS/BLM)			
National Weather Service			
US Army Corps of Engineers			
US Department of Housing and Urban Development			
US Department of Transportation			
US Environmental Protection Agency			
US Geological Survey			
Other			
Tribal Officials			
Colleges/Universities			
Land Developers and Real Estate Agencies			
Major Employers and Businesses			
Professional Associations			
Neighboring Jurisdictions			

Note: Multi-jurisdictional planning teams require at least one representative for each participating jurisdiction. This worksheet can be used by each jurisdiction to identify their local sub-team.

Mitigation Action Evaluation Worksheet

Use this worksheet to help evaluate and prioritize each mitigation action being considered by the planning team. For each action, evaluate the potential benefits and/or likelihood of successful implementation for the criteria defined below.

Rank each of the criteria with a -1, 0 or 1 using the following scale:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Example Evaluation Criteria

Life Safety – How effective will the action be at protecting lives and preventing injuries?

Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?

Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.

Political – Is there overall public support for the mitigation action? Is there the political will to support it?

Legal – Does the community have the authority to implement the action?

Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?

Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Administrative – Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?

Local Champion – Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?

Other Community Objectives – Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the comprehensive plan?

Worksheet 6.1

Mitigation Action Evaluation Worksheet

Mitigation Action	Life Safety	Property Protection	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
Local Plans and Regulations											
Structure and Infrastructure Projects											
Natural Systems Protection											
Education and Awareness Programs											

Mitigation Action Implementation Worksheet

Complete a mitigation action implementation worksheet for each identified mitigation action.

Jurisdiction:	
Mitigation Action/Project Title:	
Background/Issue:	
Ideas for Integration:	
Responsible Agency:	
Partners:	
Potential Funding:	
Cost Estimate:	
Benefits: (Losses Avoided)	
Timeline:	
Priority:	
Worksheet Completed by:	(Name/Department)

Worksheet 6.2

Mitigation Action Implementation Worksheet

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Mitigation Action Progress Report Form

Progress Report Period	From Date:	To Date:
Action/Project Title		
Responsible Agency		
Contact Name		
Contact Phone/Email		
Project Status	<input type="checkbox"/> Project completed <input type="checkbox"/> Project canceled <input type="checkbox"/> Project on schedule <input type="checkbox"/> Anticipated completion date: _____ <input type="checkbox"/> Project delayed Explain _____	

Summary of Project Progress for this Report Period

1. What was accomplished for this project during this reporting period?

2. What obstacles, problems, or delays did the project encounter?

3. If uncompleted, is the project still relevant? Should the project be changed or revised?

4. Other comments

Worksheet 7.1

Mitigation Action Progress Report Form

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Plan Update Evaluation Worksheet

Plan Section	Considerations	Explanation
Planning Process	Should new jurisdictions and/or districts be invited to participate in future plan updates?	
	Have any internal or external agencies been invaluable to the mitigation strategy?	
	Can any procedures (e.g., meeting announcements, plan updates) be done differently or more efficiently?	
	Has the Planning Team undertaken any public outreach activities?	
	How can public participation be improved?	
	Have there been any changes in public support and/or decision-maker priorities related to hazard mitigation?	
Capability Assessment	Have jurisdictions adopted new policies, plans, regulations, or reports that could be incorporated into this plan?	
	Are there different or additional administrative, human, technical, and financial resources available for mitigation planning?	
	Are there different or new education and outreach programs and resources available for mitigation activities?	
	Has NFIP participation changed in the participating jurisdictions?	
Risk Assessment	Has a natural and/or technical or human-caused disaster occurred?	
	Should the list of hazards addressed in the plan be modified?	
	Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates?	
	Do any new critical facilities or infrastructure need to be added to the asset lists?	
	Have any changes in development trends occurred that could create additional risks?	
	Are there repetitive losses and/or severe repetitive losses to document?	

Worksheet 7.2

Plan Update Evaluation Worksheet

Plan Section	Considerations	Explanation
Mitigation Strategy	Is the mitigation strategy being implemented as anticipated? Were the cost and timeline estimates accurate?	
	Should new mitigation actions be added to the Action Plan? Should existing mitigation actions be revised or eliminated from the plan?	
	Are there new obstacles that were not anticipated in the plan that will need to be considered in the next plan update?	
	Are there new funding sources to consider?	
	Have elements of the plan been incorporated into other planning mechanisms?	
Plan Maintenance Procedures	Was the plan monitored and evaluated as anticipated?	
	What are needed improvements to the procedures?	



Appendix G Hazard Events and Losses

Appendix G includes the hazard events and losses for the hazards of concern identified in Section 5.2. These tables include events that occurred in Cape May County from 2009 to 2016. For events prior to 2009, please refer to the 2010 Cape May County Hazard Mitigation Plan.

Please note that not all events that have occurred in Cape May County are included due to the extent of documentation and the fact that not all sources may have been identified or researched. Loss and impact information could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP update. Please see Section 9 for detailed information regarding impacts and losses to each municipality.



Table G-1. Coastal Erosion Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
August 21-24, 2009	Hurricane Bill	N/A	N/A	Hurricane Bill passed well east of the mid-Atlantic coast and brought rough surf, moderate to severe erosion, and strong rip currents. Waves reached up to 10 feet along the coast and led to numerous water rescues, bathing restrictions and a few injuries. The pounding surf caused beach erosion and the worst was reported in Cape May County. In Ocean City, near First Street, the erosion was severe as the geotubes were exposed on Waverly Beach. A wash over occurred at North Street where the slope reached five feet. In Avalon, vertical cuts reached three to five feet on the north side of the Borough. In Cape May City, a three to five foot cut in the dune occurred near Second Avenue. Other municipalities in the County reported vertical cuts that averaged one to two feet.
September 10-11, 2009	Heavy Rains and Flooding	N/A	N/A	<p>A low pressure system moved into the northeast toward Delaware and New Jersey. It brought tidal flooding, beach erosion and wave action and had the highest impact on coastal areas. Peak wind gusts reached between 40 and 60 mph across the eastern parts of New Jersey with the highest gusts in Atlantic County. The combination of the persistent winds and heavy rain caused downed trees across the region. The largest effect along the shore was the wave action which led to erosion from the pounding surf.</p> <p>In Cape May County, there was heavy rain and strong winds that caused flash flooding and erosion. Most vertical cuts averaged one to two feet, but reached as high as four feet in Ocean City, six feet in Sea Isle City, and seven feet in Avalon. In Ocean City, geotubes were exposed at Surf Avenue. In Sea Isle City, vertical cuts reached six feet at the 88th Street groin. The Townsend Inlet Bridge was closed between Sea Isle City and Avalon. In Avalon itself, the vertical cuts reached 7 feet between 10th and 24th Streets. In Stone Harbor, dune fencing was lost and in North Wildwood, a remnant dune in the inlet disappeared. Peak wind gusts in the County ranged from 48 mph in Ocean City to 51 mph in Cape May. Minor tidal flooding occurred with the early morning high tide as it reached 6.96 feet above MLLW (minor tidal flooding starts at 6.7 feet above MLLW). Rainfall totals ranged from 3.71 inches in Ocean City to 4.58 inches in Eldora. Flash flooding was reported in Cape May City, Wildwood, Wildwood Crest, Villas (Lower Township), Rio Grande (Upper Township) and Ocean City. The County had approximately \$20,000 in property damage from this event.</p>
October 15-19, 2009	Coastal Flood and High Surf	N/A	N/A	<p>A pair of Nor'Easters impacted the east coast. The first moved from the Tennessee Valley to the northern North Carolina coastal waters to the southeast of Cape Cod, Massachusetts. The second Nor'Easter formed off the Delmarva coastal waters and moved to the northeast and passed through Nova Scotia. These storms brought tidal flooding, heavy surf, erosion, and flooding of major roadways.</p> <p>In Cape May County, a state of emergency was declared on the 16th. In Sea Isle City, a school bus had to be rescued from flood waters. The National Guard was deployed to help with evacuations in Avalon, Lower Township, Ocean City, Stone Harbor, West Wildwood, and Wildwood. There were major roadway closures due to tidal flooding</p>



Table G-1. Coastal Erosion Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>including the 9th Street Bridge (State Route 52) to Ocean City, the Townsends Inlet Bridge between Sea Isle City and Avalon and the Georg Reading Bridge (State Route 47) between Middle Township and Wildwood. In Avalon, at the Townsends Inlet Bridge, an overwash of the seawall at Ocean Drive caused 20 feet of road shoulder to collapse on the west side of the roadway. Other road closures were reported in Sea Isle City and Strathmere. Four feet of water accumulated on some roadways in West Wildwood.</p> <p>The highest tides in the County occurred with the morning tide on the 17th. Elsewhere, along the ocean, the highest tides occurred with the morning high tide on the 18th. At the Cape May Ferry Terminal, the tide reached 8.16 feet above MLLW, with moderate tidal flooding starting at 7.7 feet above MLLW. There were vertical cuts averaging one to three feet in the County. In Ocean City, an eight foot by 14 foot cut in the dune occurred from Pennyland Avenue north to the 9th Street Bridge. Geotubes were exposed along Surf Avenue. In Sea Isle City, vertical cuts reached six feet at the south end of the municipality. In Avalon, vertical cuts reached up to 12 feet between 11th and 26th Streets. In Stone Harbor, a six foot by 10 foot dune cut occurred from 100th through 115th Streets. In Cape May, a 10-foot high by six-foot wide due cut occurred for 300 feet at Wilmington Avenue. Minor beach erosion also occurred on the Delaware Bay side of the County.</p>
March 12-13, 2010	Severe Storms and Flooding	DR-1897	Yes	<p>The pounding surf and moderate to locally severe coastal flooding impacted areas along the New Jersey coastline. In Cape May County, vertical cuts averaged two to five feet, with dune cuts reported in Avalon, North Wildwood, and Cape May. Minor flooding occurred in parts of the County. The City of Cape May had one of the highest tides reported at 7.41 feet above mean lower low water. Rainfall totals in the County ranged from 3.22 inches in Wildwood to 4.55 inches in Woodbine. In addition to the heavy rains, there were strong winds that downed trees, limbs and utility poles, causing power outages. Peak wind gusts in the County included 62 mph in Ocean City. There were six injuries associated with this event. The County had approximately \$500,000 in property damage from this event.</p>
August 27-28, 2011	Hurricane Irene	DR-4021	Yes	<p>Hurricane Irene produced torrential downpour rains that resulted in major flooding and a number of record breaking crests on area rivers, tropical storm force wind gusts, one confirmed tornado, and a 3- to 5-foot storm surge that caused moderate to severe tidal flooding with extensive beach erosion. This resulted in thousands of mandatory and voluntary evacuations along the coast and rivers from storm surge and freshwater flooding, and widespread power outages that lasted for up to two weeks in areas that were subsequently impacted by the remnant moisture from Tropical Storm Lee in September. Moderate tidal flooding occurred along the tidal Delaware River and Delaware Bay and minor to moderate flooding occurred farther north along the Delaware River. Moderate to severe tidal flooding occurred along the Atlantic Coast and Raritan Bay. Waves were estimated to reach as high as 12 feet and offshore seas reached 25 feet. The wind and</p>



Table G-1. Coastal Erosion Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>flooding across the state forced the closure of approximately 350 main roadways in the State including sections of I-287, the Garden State Parkway, and the New Jersey Turnpike. There were six direct deaths associated with this storm, all drownings. Governor Christie declared a state of emergency for all of New Jersey.</p> <p>In Cape May County, there were mandatory evacuations throughout the county. Vertical cuts averaged two to four feet. In the City of Cape May, a horizontal dune cut occurred on Poverty Beach. The highest wind gusts during Irene ranged from 53 mph in Wildwood to 75 mph at the Cape May Ferry Terminal (Lower Township). The Cape May Lewes Ferry suspended service for two days. The County also experienced moderate tidal flooding, with a peak tide of 8.55 feet above mean lower low water in the City of Cape May. Rainfall totals in the County ranged from 4.9 inches in Stone Harbor to 8.59 inches in Cedar Springs. The County had approximately \$5.5 million in damages from this event.</p>
October 29, 2012	Hurricane Sandy	DR-4086	Yes	<p>Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths. A new temporary inlet formed in Mantaloking (Ocean County) where some homes were swept away. About 2.4 million households in the State lost power. It would take two weeks for power to be fully restored to homes and businesses that were inhabitable. Overall, Sandy caused approximately \$30 billion in damages in New Jersey and caused 12 deaths in the State.</p> <p>In Cape May County, rainfall totals ranged from 3.53 inches at Dias Creek to 11.91 inches at Wildwood Crest. Peak wind gusts in the County ranged from 60 mph in Ocean City to 81 mph in Dennisville. The maximum water level for the County was in Cape May and measured at 8.91 feet MLLW and a storm surge of 3.51 feet was reported.</p> <p>With regards to erosion, the area between Reeds Beach and Cape May Point (western shoreline of Cape May County) suffered from the backside of Sandy after the storm made landfall on the New Jersey shoreline. The wind direction reversed and came across the storm surge flooded Delaware Bay with four foot waves with very short periods. Due to the high water levels, the waves pounded the dunes and made low-lying areas subject to inundation, wave damage, and loss of some structures. The shoreline of Corson's Inlet State Park, south of development in Ocean City, suffered extensive dune loss during Sandy. The southern shoreline of Ocean City was damaged due to low, narrow dunes.</p> <p>The County had approximately \$175 million in damages from this event. The County and</p>



Table G-1. Coastal Erosion Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				its municipalities received over \$40 million in obligated reimbursements for damage caused by Hurricane Sandy. Additionally, the County received \$1.24 million in HMGP funds for the energy allocation initiative generator projects. The County also received over \$2.3 million for HMGP local projects/county infrastructure projects. Over \$780,000 was received by FEMA elevation grants for nine properties in the County.
January 3, 2014	Winter Storm / Coastal Flooding	N/A	N/A	<p>A winter storm brought five to nine inches of snow across most of New Jersey and about 10 inches in northern Ocean County and in Monmouth County. This caused hazardous travel conditions. Governor Christie declared a state of emergency in New Jersey. There were numerous school, government and business closures. Warming centers were opened. Overall snow totals ranged from 5.5 inches in Morris and Warren counties to 10.7 inches in Monmouth County. Wind gusts ranged from 40 mph in Monmouth County to 52 mph in Cape May County.</p> <p>In Cape May County, snowfall totals ranged from eight to nine inches. Peak wind gusts of 52 mph was measured in Cape May City. Tidal flooding also impacted Cape May County which left many roadways icy due to the low temperatures that occurred on the 3rd. Moderate tidal flooding occurred in the County; high tide reached 7.27 feet above MLLW at Cape May.</p>
December 9, 2014	Nor'Easter and Flooding	N/A	N/A	<p>A strong Nor'Easter brought strong winds and minor to moderate tidal flooding the Upper Delaware Bay and around Raritan Bay. There was moderate tidal flooding in Lower Delaware Bay and Atlantic Coastal New Jersey. The storm also caused minor to moderate beach erosion. Peak wind gusts ranged from 45 to 55 mph and downed trees, limbs and power lines. Tidal flooding from this event impacted all of the coastal counties in New Jersey.</p> <p>In Cape May County, the highest tide was at the Cape May Ferry Terminal and was 7.78 feet above mean lower low water (moderate tidal flooding). Peak wind gusts of 46 mph was recorded at Cape May Harbor. In West Wildwood, the George Redding Bridge (State Route 47) was closed. In Ocean City, tidal flooding reached the doorways of businesses on West Avenue. Schools in the County were closed due to this event.</p>
January 26, 2015	Winter Storm / Coastal Flooding	N/A	N/A	<p>A winter storm brought heavy snow and minor tidal flooding to parts of New Jersey. Snowfall in northwest New Jersey averaged one to five inches. A state of emergency was declared and a driving ban was enacted. Trains and ferries were operating on a modified schedule. There was minor coastal flooding during the high tide cycle during the predawn hours of the 27th, as well as some beach erosion. Snow began falling in the state during the early morning on the 26th. Precipitation started falling as rain in the southern half of the state before it turned over to snow. Overall snowfall totals across New Jersey ranged from 0.9 inches in Cumberland County to 12 inches in Monmouth County.</p>



Table G-1. Coastal Erosion Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>In addition to snowfall, the storm system caused minor tidal flooding during the early morning high tide cycle on the 27th. The highest tide was reported at Sandy Hook (Monmouth County) which reached 7.17 feet above MLLW. In Cape May County, the highest tide at Cape May Ferry Terminal was 7.05 feet above MLLW (minor tidal flooding threshold is 6.70 feet above MLLW). Other locations in the County experienced tidal flooding as well and included the following: Ocean City (6.12 feet above MLLW), Avalon (6.22 feet above MLLW), Stone Harbor (6.66 feet above MLLW), and Cape May Harbor (6.53 feet above MLLW).</p>
October 2-3, 2015	Impacts from Hurricane Joaquin / Nor'Easter	N/A	N/A	<p>Hurricane Joaquin's path passed over or near parts of the northwestern Bahamas with maximum sustained winds near 130 mph, qualifying it as a Category 4 storm. Even though Joaquin's path was east of Cape May County, the County felt the impacts of this storm as Nor'Easter impacted the State of New Jersey. This event caused periods of heavy rain, strong to high winds, beach erosion, power outages, and minor to moderate flooding. In some areas of the state, there was significant beach erosion. In many locations, waves carried away significant amounts of sand from the beach and dune systems that had been built up after Hurricane Sandy. The hardest hit counties in New Jersey included Cape May, Ocean, and Monmouth. Governor Christie declared a state of emergency for New Jersey prior to the start of the storm. Rainfall totals in the state ranged from 1.5 to 3.5 inches. Overall, the state had \$32 million in damages.</p> <p>In Cape May County, severe beach erosion was reported in North Wildwood. The storm left five foot or higher cliffs carved out of the dunes along sections of the beach. In Middle Township, a vacant and structurally unsound home was dislodged from its pilings in the Grassy Sound Channel behind North Wildwood on October 2nd and it floated into the Intracoastal Waterway before it broke apart and settled into the marsh. In addition to beach erosion, coastal flooding impacted Cape May County as well. Low-lying areas in the Strathmere section of Upper Township and Sea Isle City experienced in flooding. Moderate tidal flooding was reported at the Cape May tide gage – 8.07 feet above MLLW was recorded at 12:42pm on October 2nd (moderate tidal flooding starts at 7.7 feet above MLLW). Measured wind gusts in the county included 62 mph in the City of Cape May and 44 mph at the Cape May County Airport. Overall, the County had approximately \$12 million in damages from this event.</p>
October 5, 2015	Strong Winds and Rain	N/A	N/A	<p>There were reports of moderate to severe beach erosion up and down the New Jersey coastline with the worst hit areas in Atlantic and Cape May Counties. On some beaches, the dunes were partially to completely washed away. There were numerous road closures. In Cape May County, a vacant house fell into flood waters after the structure was weakened. Tides reached 8.19 feet in North Wildwood. Wind gusts of 62 mph. The storm carved eight foot high cliffs in the dunes.</p>

Source: FEMA 2016; NOAA-NCDC 2016



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
September 10-11, 2009	Heavy Rains and Flooding	N/A	N/A	<p>A low pressure system moved into the northeast toward Delaware and New Jersey. It brought tidal flooding, beach erosion and wave action and had the highest impact on coastal areas. Peak wind gusts reached between 40 and 60 mph across the eastern parts of New Jersey with the highest gusts in Atlantic County. The combination of the persistent winds and heavy rain caused downed trees across the region. The largest effect along the shore was the wave action which led to erosion from the pounding surf.</p> <p>In Cape May County, there was heavy rain and strong winds that caused flash flooding and erosion. Most vertical cuts averaged one to two feet, but reached as high as four feet in Ocean City, six feet in Sea Isle City, and seven feet in Avalon. In Ocean City, geotubes were exposed at Surf Avenue. In Sea Isle City, vertical cuts reached six feet at the 88th Street groin. The Townsend Inlet Bridge was closed between Sea Isle City and Avalon. In Avalon itself, the vertical cuts reached 7 feet between 10th and 24th Streets. In Stone Harbor, dune fencing was lost and in North Wildwood, a remnant dune in the inlet disappeared. Peak wind gusts in the County ranged from 48 mph in Ocean City to 51 mph in Cape May. Minor tidal flooding occurred with the early morning high tide as it reached 6.96 feet above MLLW (minor tidal flooding starts at 6.7 feet above MLLW). Rainfall totals ranged from 3.71 inches in Ocean City to 4.58 inches in Eldora. Flash flooding was reported in Cape May City, Wildwood, Wildwood Crest, Villas (Lower Township), Rio Grande (Upper Township) and Ocean City. The County had approximately \$20,000 in property damage from this event.</p>
October 15-19, 2009	Coastal Flood and High Surf (Nor'Easter)	N/A	N/A	<p>A pair of Nor'Easters impacted the east coast. The first moved from the Tennessee Valley to the northern North Carolina coastal waters to the southeast of Cape Cod, Massachusetts. The second Nor'Easter formed off the Delmarva coastal waters and moved to the northeast and passed through Nova Scotia. These storms brought tidal flooding, heavy surf, erosion, and flooding of major roadways.</p> <p>In Cape May County, a state of emergency was declared on the 16th. In Sea Isle City, a school bus had to be rescued from flood waters. The National Guard was deployed to help with evacuations in Avalon, Lower Township, Ocean City, Stone Harbor, West Wildwood, and Wildwood. There were major roadway closures due to tidal flooding including the 9th Street Bridge (State Route 52) to Ocean City, the Townsends Inlet Bridge between Sea Isle City and Avalon and the Georg Reading Bridge (State Route 47) between Middle Township and Wildwood. In Avalon, at the Townsends Inlet Bridge, an overwash of the seawall at Ocean Drive caused 20 feet of road shoulder to collapse on the west side of the roadway. Other road closures were reported in Sea Isle City and Strathmere. Four feet of water accumulated on some roadways in West Wildwood.</p> <p>The highest tides in the County occurred with the morning tide on the 17th. Elsewhere, along the ocean, the highest tides occurred with the morning high tide on the 18th. At the Cape May Ferry Terminal, the tide reached 8.16 feet above MLLW, with moderate tidal flooding starting at 7.7 feet</p>



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				above MLLW. There were vertical cuts averaging one to three feet in the County. In Ocean City, an eight foot by 14 foot cut in the dune occurred from Pennyland Avenue north to the 9th Street Bridge. Geotubes were exposed along Surf Avenue. In Sea Isle City, vertical cuts reached six feet at the south end of the municipality. In Avalon, vertical cuts reached up to 12 feet between 11th and 26th Streets. In Stone Harbor, a six foot by 10 foot dune cut occurred from 100th through 115th Streets. In Cape May, a 10-foot high by six-foot wide due cut occurred for 300 feet at Wilmington Avenue. Minor beach erosion also occurred on the Delaware Bay side of the County.
November 11 – 15, 2009	Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'Easter	DR-1867	Yes	<p>A powerful Nor'Easter produced wind gusts of nearly 60 mph, widespread moderate tidal flooding, heavy rain, and severe beach erosion along the New Jersey coastline. Several thousand people were without power in the state. A state of emergency was declared for Atlanta, Burlington, Cape May, Cumberland, Ocean and Monmouth Counties.</p> <p>Cape May County reported the worst damage. There were no mandatory evacuations; however, approximately 100 people left their homes in Ocean City and Wildwood. Shelters were opened in Avalon, Lower Township and North Wildwood. During the morning high tide of November 13th, nearly every bridge and causeway leading to the barrier islands in the county was closed. The Townsend Inlet Bridge between Sea Isle City and Avalon was closed through the 15th after a work barge rammed into it. In Avalon, motorists had to be rescued from their cars due to flooding. Business districts in Avalon, Sea Isle City and Stone Harbor were all flooded. Homes in Sea Isle City had homes that experienced flood damage to the first floor. Significant erosion was reported in Ocean City, Sea Isle City (three dune breaches) and Avalon. Ocean City lost seven million cubic yards of sand. There was no beach left north of 21st Street in Avalon. The high winds damaged the roofs of three motels in Wildwood along with one large restaurant sign. Service on the Cape May Lewes Ferry was limited. High tide reached 8.21 feet above mean low water which was the highest tide since February 5, 1998. Peak wind gusts ranged from 51 mph in Wildwood to 57 mph in Cape May City. Rainfall totals ranged from 2.24 inches in Middle Township to 2.69 inches in Sea Isle City. The County had over \$90 million in damages from this event.</p>
March 12-13, 2010	Severe Storms and Flooding	DR-1897	Yes	The pounding surf and moderate to locally severe coastal flooding impacted areas along the New Jersey coastline. In Cape May County, vertical cuts averaged two to five feet, with dune cuts reported in Avalon, North Wildwood, and Cape May. Minor flooding occurred in parts of the County. The City of Cape May had one of the highest tides reported at 7.41 feet above mean lower low water. Rainfall totals in the County ranged from 3.22 inches in Wildwood to 4.55 inches in Woodbine. In addition to the heavy rains, there were strong winds that downed trees, limbs and utility poles, causing power outages. Peak wind gusts in the County included 62 mph in Ocean City. There were six injuries associated with this event. The County had approximately \$500,000 in property damage from this event.
August 27-28, 2011	Hurricane Irene	DR-4021	Yes	Hurricane Irene produced torrential downpour rains that resulted in major flooding and a number of record breaking crests on area rivers, tropical storm force wind gusts, one confirmed tornado, and a



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>3- to 5-foot storm surge that caused moderate to severe tidal flooding with extensive beach erosion. This resulted in thousands of mandatory and voluntary evacuations along the coast and rivers from storm surge and freshwater flooding, and widespread power outages that lasted for up to two weeks in areas that were subsequently impacted by the remnant moisture from Tropical Storm Lee in September. Moderate tidal flooding occurred along the tidal Delaware River and Delaware Bay and minor to moderate flooding occurred farther north along the Delaware River. Moderate to severe tidal flooding occurred along the Atlantic Coast and Raritan Bay. Waves were estimated to reach as high as 12 feet and offshore seas reached 25 feet. The wind and flooding across the state forced the closure of approximately 350 main roadways in the State including sections of I-287, the Garden State Parkway, and the New Jersey Turnpike. There were six direct deaths associated with this storm, all drownings. Governor Christie declared a state of emergency for all of New Jersey.</p> <p>In Cape May County, there were mandatory evacuations throughout the county. Vertical cuts averaged two to four feet. In the City of Cape May, a horizontal dune cut occurred on Poverty Beach. The highest wind gusts during Irene ranged from 53 mph in Wildwood to 75 mph at the Cape May Ferry Terminal (Lower Township). The Cape May Lewes Ferry suspended service for two days. The County also experienced moderate tidal flooding, with a peak tide of 8.55 feet above mean lower low water in the City of Cape May. Rainfall totals in the County ranged from 4.9 inches in Stone Harbor to 8.59 inches in Cedar Springs. The County had approximately \$5.5 million in damages from this event.</p>
June 4, 2012	Coastal Flood	N/A	N/A	<p>The combination of spring tides associated with the full moon and an onshore flow caused minor to moderate tidal flooding during the first week of June. Moderate tidal flooding occurred along Raritan Bay, coastal New Jersey and Delaware Bay during the evening and overnight high tide cycle on June 4th. Tidal flooding nearly reached moderate levels on tidal sections of the Delaware River as well. In Cape May County, the highest tide occurred during high tide and reached 8.18 feet above MLLW in the City of Cape May. Other tides in the County were recorded and included 9.19 feet above MLLW in Sea Isle City, 6.07 feet above MLLW in Avalon, 7.33 feet above MLLW in Stone Harbor, and 7.59 feet above MLLW in Cape May Harbor.</p>
August 11, 2012	Thunderstorms and Flash Flooding	N/A	N/A	<p>A series of thunderstorms preceding an approaching cold front that coincided nearly exactly with the afternoon high tide produced flash flooding along coastal sections of Atlantic and Cape May Counties. Doppler Radar storm total estimates reached between 2.0 and 2.5 inches right along the immediate shore from Ocean City (Cape May County) northeast into Atlantic City (Atlantic County).</p> <p>Thunderstorms with torrential downpours caused flash flooding in Ocean City, Sea Isle City and Middle and Lower Townships. Widespread roadway flooding was reported, especially in Ocean City. The heavy rain coincided with the afternoon high tide. Event precipitation totals included 1.78 inches in Dennis Township and 1.70 inches in Middle Township.</p>



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
August 25-26, 2012	Thunderstorms and Flash Flooding	N/A	N/A	A series of slow moving thunderstorms brought around 5 inches of rain and caused flash flooding in Cape May County. In Avalon and Cape May, vehicles were submerged in flood waters. In North Wildwood and Wildwood Crest, numerous streets were flooded. Some businesses in Wildwood were flooded. Overall, the County had approximately \$150,000 in property damage from this event.
October 29, 2012	Hurricane Sandy	DR-4086	Yes	<p>Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths. A new temporary inlet formed in Mantaloking (Ocean County) where some homes were swept away. About 2.4 million households in the State lost power. It would take two weeks for power to be fully restored to homes and businesses that were inhabitable. Overall, Sandy caused approximately \$30 billion in damages in New Jersey and caused 12 deaths in the State.</p> <p>In Cape May County, rainfall totals ranged from 3.53 inches at Dias Creek to 11.91 inches at Wildwood Crest. Peak wind gusts in the County ranged from 60 mph in Ocean City to 81 mph in Dennisville. The maximum water level for the County was in Cape May and measured at 8.91 feet MLLW and a storm surge of 3.51 feet was reported. The County had approximately \$175 million in damages from this event. The County and its municipalities received over \$40 million in obligated reimbursements for damage caused by Hurricane Sandy. Additionally, the County received \$1.24 million in HMGP funds for the energy allocation initiative generator projects. The County also received over \$2.3 million for HMGP local projects/county infrastructure projects. Over \$780,000 was received by FEMA elevation grants for nine properties in the County.</p>
March 6-7, 2013	Coastal Flooding / Nor'Easter	N/A	N/A	<p>An intense Nor'Easter brought strong to high winds across most of central and southern New Jersey as well as minor to moderate tidal flooding along Raritan Bay, lower Delaware Bay and on the ocean side. Peak wind gusts reached around 70 mph and downed trees, tree limbs and wires and caused some structural damage. About 50,000 homes and businesses lost power. Moderate to minor tidal flooding occurred during the high tide cycles on March 6th and 7th. Wave action and heavy rain also occurred during this storm. Additionally, the north to northeast winds prevented the back bays from emptying. Overall, the state had approximately \$745,000 in property damage from this event.</p> <p>In Cape May County, rainfall totals included 1.64 inches at Wildwood Crest and 1.46 inches at Middle Township. The highest tide reached 7.54 feet above MLLW in Cape May. High tide in Sea Isle City reached 7.29 feet above MLLW. Tidal flooding closed the George Redding Bridge (State Route 47). Roadway flooding was reported in Ocean City, Avalon and Stone Harbor. In Sea Isle City, vehicles were trapped in flood waters on Landis Avenue. In North Wildwood, Angelsea Drive</p>



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				was closed. Peak wind gusts included 69 mph in the Cities of Ocean City and Cape May, 67 mph in Cape May Harbor and 56 mph in West Cape May. The high winds blew off part of the roof of a condominium in Stone Harbor. The winds also downed poles and wires that resulted in the closure of Stone Harbor Boulevard. Additionally, the winds resulted in the cancellation of four crossing by the Cape May-Lewes Ferry. The County had approximately \$145,000 in property damage from this event.
July 12, 2013	Thunderstorms and Flash Flooding	N/A	N/A	<p>Bands of showers and thunderstorms with heavy rain associated with a low pressure system along the frontal boundary caused some poor drainage flooding in Mercer, Salem and Cumberland Counties and flash flooding in Cape May County. The heaviest rain fell during the afternoon in southern New Jersey and during the late afternoon and early evening in central New Jersey. Event precipitation totals averaged 1 to 2.5 inches in Mercer, Salem and Cumberland Counties as well as the northern half of Cape May County and 2.5 to 5.5 inches in the southern half of Cape May County.</p> <p>Showers and thunderstorms with torrential downpours caused poor drainage flash flooding in the southern third of Cape May County. Event precipitation totals included 5.60 inches in Green Creek, 5.51 inches in Erma, 3.83 inches in Cape May, 3.71 inches in Cape May Harbor and 3.12 inches in Wildwood Crest.</p>
January 3, 2014	Winter Storm / Coastal Flooding	N/A	N/A	<p>A winter storm brought five to nine inches of snow across most of New Jersey and about 10 inches in northern Ocean County and in Monmouth County. This caused hazardous travel conditions. Governor Christie declared a state of emergency in New Jersey. There were numerous school, government and business closures. Warming centers were opened. Overall snow totals ranged from 5.5 inches in Morris and Warren counties to 10.7 inches in Monmouth County. Wind gusts ranged from 40 mph in Monmouth County to 52 mph in Cape May County.</p> <p>In Cape May County, snowfall totals ranged from eight to nine inches. Peak wind gusts of 52 mph was measured in Cape May City. Tidal flooding also impacted Cape May County which left many roadways icy due to the low temperatures that occurred on the 3rd. Moderate tidal flooding occurred in the County; high tide reached 7.27 feet above MLLW at Cape May.</p>
July 10, 2014	Thunderstorms and Flash Flooding	N/A	N/A	Thunderstorms with heavy rain caused flash flooding along the barrier islands of Cape May County starting on the morning of the 10th. In Ocean City, water was reported as high as 3 feet on some roadways with flooding up the entrance of some homes and businesses. Rainfall totals included 4.48 inches at Beesley's Point, 3.65 inches in Woodbine, 2.44 inches in Upper Township and 2.32 inches in Dennis Township.
December 9, 2014	Nor'Easter and Flooding	N/A	N/A	A strong Nor'Easter brought strong winds and minor to moderate tidal flooding the Upper Delaware Bay and around Raritan Bay. There was moderate tidal flooding in Lower Delaware Bay and Atlantic Coastal New Jersey. The storm also caused minor to moderate beach erosion. Peak wind gusts ranged from 45 to 55 mph and downed trees, limbs and power lines. Tidal flooding from this



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>event impacted all of the coastal counties in New Jersey.</p> <p>In Cape May County, the highest tide was at the Cape May Ferry Terminal and was 7.78 feet above mean lower low water (moderate tidal flooding). Peak wind gusts of 46 mph was recorded at Cape May Harbor. In West Wildwood, the George Redding Bridge (State Route 47) was closed. In Ocean City, tidal flooding reached the doorways of businesses on West Avenue. Schools in the County were closed due to this event.</p>
January 26, 2015	Winter Storm / Coastal Flooding	N/A	N/A	<p>A winter storm brought heavy snow and minor tidal flooding to parts of New Jersey. Snowfall in northwest New Jersey averaged one to five inches. A state of emergency was declared and a driving ban was enacted. Trains and ferries were operating on a modified schedule. There was minor coastal flooding during the high tide cycle during the predawn hours of the 27th, as well as some beach erosion. Snow began falling in the state during the early morning on the 26th. Precipitation started falling as rain in the southern half of the state before it turned over to snow. Overall snowfall totals across New Jersey ranged from 0.9 inches in Cumberland County to 12 inches in Monmouth County.</p> <p>In addition to snowfall, the storm system caused minor tidal flooding during the early morning high tide cycle on the 27th. The highest tide was reported at Sandy Hook (Monmouth County) which reached 7.17 feet above MLLW. In Cape May County, the highest tide at Cape May Ferry Terminal was 7.05 feet above MLLW (minor tidal flooding threshold is 6.70 feet above MLLW). Other locations in the County experienced tidal flooding as well and included the following: Ocean City (6.12 feet above MLLW), Avalon (6.22 feet above MLLW), Stone Harbor (6.66 feet above MLLW), and Cape May Harbor (6.53 feet above MLLW).</p>
August 21, 2015	Heavy Rain and Flooding	N/A	N/A	<p>Scattered showers and thunderstorms moved across southeastern Pennsylvania and into central and southern New Jersey. The thunderstorms were accompanied by heavy rainfall which led to areas of flash flooding. There was also isolated wind damage associated with this event. Rainfall totals ranged from two to five inches where flash flooding occurred.</p> <p>In Cape May County, the storms moved across portions of the County and flash flooding was reported in the City of North Wildwood. Numerous streets in the City were flooded and impassable. Overall, rainfall totals in the County ranged from 2.61 inches in Middle Township to 3.03 inches in the City of North Wildwood.</p>
October 2-3, 2015	Impacts from Hurricane Joaquin / Nor'Easter	N/A	N/A	<p>Hurricane Joaquin's path passed over or near parts of the northwestern Bahamas with maximum sustained winds near 130 mph, qualifying it as a Category 4 storm. Even though Joaquin's path was east of Cape May County, the County felt the impacts of this storm as Nor'Easter impacted the State of New Jersey. This event caused periods of heavy rain, strong to high winds, beach erosion, power outages, and minor to moderate flooding. In some areas of the state, there was significant beach erosion. In many locations, waves carried away significant amounts of sand from the beach</p>



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>and dune systems that had been built up after Hurricane Sandy. The hardest hit counties in New Jersey included Cape May, Ocean, and Monmouth. Governor Christie declared a state of emergency for New Jersey prior to the start of the storm. Rainfall totals in the state ranged from 1.5 to 3.5 inches. Overall, the state had \$32 million in damages.</p> <p>In Cape May County, severe beach erosion was reported in North Wildwood. The storm left five foot or higher cliffs carved out of the dunes along sections of the beach. In Middle Township, a vacant and structurally unsound home was dislodged from its pilings in the Grassy Sound Channel behind North Wildwood on October 2nd and it floated into the Intracoastal Waterway before it broke apart and settled into the marsh. In addition to beach erosion, coastal flooding impacted Cape May County as well. Low-lying areas in the Strathmere section of Upper Township and Sea Isle City experienced in flooding. Moderate tidal flooding was reported at the Cape May tide gage – 8.07 feet above MLLW was recorded at 12:42pm on October 2nd (moderate tidal flooding starts at 7.7 feet above MLLW). Measured wind gusts in the county included 62 mph in the City of Cape May and 44 mph at the Cape May County Airport. Overall, the County had approximately \$12 million in damages from this event.</p>
January 22-24, 2016	Winter Storm & Coastal Flooding (Winter Storm Jonas)	DR-4264	Yes	<p>Snow began to develop on January 22nd from south to north. Across the coastal regions, the snow changed over to rain which limited the totals for those areas. There were intense bands of snow with rates of two to four inches per hour in north-central New Jersey and the Lehigh Valley in Pennsylvania. In addition to snow, there were strong wind gusts that topped out between 30 and 50 mph for most of the region. At the airports, most flights were cancelled due to the storm. Travel became nearly impossible at times for most of the areas impacted. Moderate to major tidal flooding occurred along the New Jersey and Delaware beaches which resulted in severe beach erosion and some property damage in coastal communities. Snowfall totals ranged from two to 32 inches, with the highest totals from Berks, Pennsylvania northwest to Allentown (Pennsylvania) and then into north-central New Jersey.</p> <p>In Cape May County, snowfall totals ranged from seven inches in the City of Cape May to 11.3 inches in Wildwood Crest. Peak wind gusts ranged from 50 mph in Cape May Point to 64 mph in Strathmere. In addition to snow and wind, coastal flooding impacted the county. In Cape May, there was a record storm surge of 9.4 feet. The tides in the County were as high as 10 feet in some parts which flooded garages and ground floors of buildings. Flood damage was significant as water levels exceeded those observed during Sandy and ranked in the top 10 on record. Beach erosion was moderate to major. Major tidal flooding was reported at the Cape May tide gage – 8.98 feet above MLLW was recorded at 1:30pm on January 23rd (major tidal flooding starts at 8.7 feet above MLLW).</p>
February 8-10, 2016	Nor'Easter & Coastal Flooding	N/A	N/A	A powerful Nor'Easter brought blizzard conditions to eastern Long Island and southeast New England and brought strong winds, rain and snow to the southern half of New Jersey. In Cape May



Table G-2. Flooding Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				County, snowfall totals were a minimum (0.2 inches in Middle Township and 0.6 inches in Cape May City). However, flooding was an issue in the County. The NWS issued a coastal flood warning for the county. During high tide, numerous streams were flooded and had to be closed. Moderate coastal flooding was reported at the Cape May tide gage – 8.159 feet above MLLW was recorded at 1:54pm on February 9 th (moderate tidal flooding starts at 7.7 feet above MLLW).

Source: FEMA 2015; NCDC 2015; NWS 2015; SPC 2015; NJ HMP 2014; ONJSC 2016
 DR Disaster Declaration (FEMA)
 FEMA Federal Emergency Management Agency
 HMP Hazard Mitigation Plan
 MLLW Mean Lower Low Water
 Mph miles per hour
 N/A Not Applicable
 NCDC National Climatic Data Center
 NHC National Hurricane Center
 NJ New Jersey
 NOAA National Oceanic and Atmospheric Administration
 NWS National Weather Service
 USGS U.S. Geological Survey



Table G-3. Hurricane and Tropical Storm Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
August 22-24, 2009	Hurricane Bill	N/A	N/A	Hurricane Bill passed east of the Mid-Atlantic Coast. Swells from the hurricane led to rough surf, moderate to severe erosion, and numerous and strong rip currents. The worst conditions occurred on August 22 nd as Hurricane Bill made its closest pass to the region. Waves reached up to 10 feet along the coast and led to numerous water rescues, bathing restrictions, and injuries. The worst erosion was reported in Cape May County. In Ocean City, near First Street, severe erosion occurred as geotubes were exposed on Waverly Beach. A wash over occurred at North Street where the slope reached five feet. In the Borough of Avalon, vertical cuts reached three to five feet on the north side of the Borough. In Cape May City, a three to five foot cufe in the dune occurred near Second Avenue. Other municipalities in the County reported vertical cuts that averaged one to two feet. Minor tidal flooding was not reported; however, high tide reached underneath the Ocean City boardwalk on August 22 nd .
August 29, 2009	Remnants of Tropical Storm Danny	N/A	N/A	The remnants of Tropical Storm Danny passed east of the coastline of New Jersey. It brought rip currents and heavy surf and waves reached as high as eight feet. Some beach erosion occurred but was not severe. In Cape May County, the storm brought high surf and rip currents.
November 11 – 15, 2009	Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'Easter	DR-1867	Yes	A powerful Nor'Easter produced wind gusts of nearly 60 mph, widespread moderate tidal flooding, heavy rain, and severe beach erosion along the New Jersey coastline. Several thousand people were without power in the state. A state of emergency was declared for Atlanta, Burlington, Cape May, Cumberland, Ocean and Monmouth Counties. Cape May County reported the worst damage. There were no mandatory evacuations; however, approximately 100 people left their homes in Ocean City and Wildwood. Shelters were opened in Avalon, Lower Township and North Wildwood. During the morning high tide of November 13 th , nearly every bridge and causeway leading to the barrier islands in the county was closed. The Townsend Inlet Bridge between Sea Isle City and Avalon was closed through the 15 th after a work barge rammed into it. In Avalon, motorists had to be rescued from their cars due to flooding. Business districts in Avalon, Sea Isle City and Stone Harbor were all flooded. Homes in Sea Isle City had homes that experienced flood damage to the first floor. Significant erosion was reported in Ocean City, Sea Isle City (three dune breaches) and Avalon. Ocean City lost seven million cubic yards of sand. There was no beach left north of 21 st Street in Avalon. The high winds damaged the roofs of three motels in Wildwood along with one large restaurant sign. Service on the Cape May Lewes Ferry was limited. High tide reached 8.21 feet above mean low water which was the highest tide since February 5, 1998. Peak wind gusts ranged from 51 mph in Wildwood to 57 mph in Cape May City. Rainfall totals ranged from 2.24 inches in Middle Township to 2.69 inches in Sea Isle City. The County had over \$90 million in damages from this event.
August 28-29, 2010	Hurricane Danielle	N/A	N/A	Swells associated with Hurricane Danielle caused rough surf and enhanced rip currents along the shoreline of New Jersey. There were hundreds of rescues and three reported injuries. Many beaches were closed. In Cape May County, two children and an adult were injured in Ocean City.



Table G-3. Hurricane and Tropical Storm Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				There were over 100 rescues during a two-day period.
September 2-4, 2010	Hurricane Earl	N/A	N/A	Hurricane Earl passed 165 miles east of Atlantic City and generated large swells, heavy surf, enhanced rip currents and minor tidal flooding. Many beaches were closed due to the conditions. The highest tides reached 6.18 feet above MLLW in Atlantic City and 6.78 feet above MLLW in Cape May (minor tidal flooding starts at 6.7 feet above MLLW).
September 19-21, 2010	Hurricane Igor	N/A	N/A	The swells from Hurricane Igor produced heavy surf and rip currents along the New Jersey coastline, including parts of Cape May County.
August 27-28, 2011	Hurricane Irene	DR-4021	Yes	<p>Hurricane Irene produced torrential downpour rains that resulted in major flooding and a number of record breaking crests on area rivers, tropical storm force wind gusts, one confirmed tornado, and a 3- to 5-foot storm surge that caused moderate to severe tidal flooding with extensive beach erosion. This resulted in thousands of mandatory and voluntary evacuations along the coast and rivers from storm surge and freshwater flooding, and widespread power outages that lasted for up to two weeks in areas that were subsequently impacted by the remnant moisture from Tropical Storm Lee in September. Moderate tidal flooding occurred along the tidal Delaware River and Delaware Bay and minor to moderate flooding occurred farther north along the Delaware River. Moderate to severe tidal flooding occurred along the Atlantic Coast and Raritan Bay. Waves were estimated to reach as high as 12 feet and offshore seas reached 25 feet. The wind and flooding across the state forced the closure of approximately 350 main roadways in the State including sections of I-287, the Garden State Parkway, and the New Jersey Turnpike. There were six direct deaths associated with this storm, all drownings. Governor Christie declared a state of emergency for all of New Jersey.</p> <p>In Cape May County, there were mandatory evacuations throughout the county. Vertical cuts averaged two to four feet. In the City of Cape May, a horizontal dune cut occurred on Poverty Beach. The highest wind gusts during Irene ranged from 53 mph in Wildwood to 75 mph at the Cape May Ferry Terminal (Lower Township). The Cape May Lewes Ferry suspended service for two days. The County also experienced moderate tidal flooding, with a peak tide of 8.55 feet above mean lower low water in the City of Cape May. Rainfall totals in the County ranged from 4.9 inches in Stone Harbor to 8.59 inches in Cedar Springs. The County had approximately \$5.5 million in damages from this event.</p>
October 29, 2012	Hurricane Sandy	DR-4086	Yes	<p>Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths. A new temporary inlet formed in Mantaloking (Ocean County) where some homes were swept away. About 2.4 million households in the State lost power. It would take two weeks for power to be fully restored to homes and businesses that were inhabitable. Overall, Sandy caused approximately \$30 billion in damages in New Jersey and caused 12 deaths in the State.</p>



Table G-3. Hurricane and Tropical Storm Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>In Cape May County, rainfall totals ranged from 3.53 inches at Dias Creek to 11.91 inches at Wildwood Crest. Peak wind gusts in the County ranged from 60 mph in Ocean City to 81 mph in Dennisville. The maximum water level for the County was in Cape May and measured at 8.91 feet MLLW and a storm surge of 3.51 feet was reported. The County had approximately \$175 million in damages from this event. The County and its municipalities received over \$40 million in obligated reimbursements for damage caused by Hurricane Sandy. Additionally, the County received \$1.24 million in HMGP funds for the energy allocation initiative generator projects. The County also received over \$2.3 million for HMGP local projects/county infrastructure projects. Over \$780,000 was received by FEMA elevation grants for nine properties in the County.</p>

Source: FEMA 2015; NCDC 2015; NWS 2015; SPC 2015; NJ HMP 2014; ONJSC 2016
 DR Disaster Declaration (FEMA)
 FEMA Federal Emergency Management Agency
 HMP Hazard Mitigation Plan
 Mph miles per hour
 N/A Not Applicable
 NCDC National Climatic Data Center
 NHC National Hurricane Center
 NJ New Jersey
 NOAA National Oceanic and Atmospheric Administration
 NWS National Weather Service



Table G-4. Nor'Easter Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
October 15-19, 2009	Coastal Flood and High Surf (Nor'Easter)	N/A	N/A	<p>A pair of Nor'Easters impacted the east coast. The first moved from the Tennessee Valley to the northern North Carolina coastal waters to the southeast of Cape Cod, Massachusetts. The second Nor'Easter formed off the Delmarva coastal waters and moved to the northeast and passed through Nova Scotia. These storms brought tidal flooding, heavy surf, erosion, and flooding of major roadways.</p> <p>In Cape May County, a state of emergency was declared on the 16th. In Sea Isle City, a school bus had to be rescued from flood waters. The National Guard was deployed to help with evacuations in Avalon, Lower Township, Ocean City, Stone Harbor, West Wildwood, and Wildwood. There were major roadway closures due to tidal flooding including the 9th Street Bridge (State Route 52) to Ocean City, the Townsends Inlet Bridge between Sea Isle City and Avalon and the Georg Reading Bridge (State Route 47) between Middle Township and Wildwood. In Avalon, at the Townsends Inlet Bridge, an overwash of the seawall at Ocean Drive caused 20 feet of road shoulder to collapse on the west side of the roadway. Other road closures were reported in Sea Isle City and Strathmere. Four feet of water accumulated on some roadways in West Wildwood.</p> <p>The highest tides in the County occurred with the morning tide on the 17th. Elsewhere, along the ocean, the highest tides occurred with the morning high tide on the 18th. At the Cape May Ferry Terminal, the tide reached 8.16 feet above MLLW, with moderate tidal flooding starting at 7.7 feet above MLLW. There were vertical cuts averaging one to three feet in the County. In Ocean City, an eight foot by 14 foot cut in the dune occurred from Pennyland Avenue north to the 9th Street Bridge. Geotubes were exposed along Surf Avenue. In Sea Isle City, vertical cuts reached six feet at the south end of the municipality. In Avalon, vertical cuts reached up to 12 feet between 11th and 26th Streets. In Stone Harbor, a six foot by 10 foot dune cut occurred from 100th through 115th Streets. In Cape May, a 10-foot high by six-foot wide due cut occurred for 300 feet at Wilmington Avenue. Minor beach erosion also occurred on the Delaware Bay side of the County.</p>
November 11 – 15, 2009	Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'Easter	DR-1867	Yes	<p>A powerful Nor'Easter produced wind gusts of nearly 60 mph, widespread moderate tidal flooding, heavy rain, and severe beach erosion along the New Jersey coastline. Several thousand people were without power in the state. A state of emergency was declared for Atlanta, Burlington, Cape May, Cumberland, Ocean and Monmouth Counties.</p> <p>Cape May County reported the worst damage. There were no mandatory evacuations; however, approximately 100 people left their homes in Ocean City and Wildwood. Shelters were opened in Avalon, Lower Township and North Wildwood. During the morning high tide of November 13th, nearly every bridge and causeway leading to the barrier islands in the county was closed. The Townsend Inlet Bridge between Sea Isle City and Avalon was closed through the 15th after a work barge rammed into it. In Avalon, motorists had to be rescued from their cars due to flooding. Business districts in Avalon, Sea Isle City and Stone Harbor were all flooded. Homes in Sea Isle</p>



Table G-4. Nor'Easter Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				City had homes that experienced flood damage to the first floor. Significant erosion was reported in Ocean City, Sea Isle City (three dune breaches) and Avalon. Ocean City lost seven million cubic yards of sand. There was no beach left north of 21 st Street in Avalon. The high winds damaged the roofs of three motels in Wildwood along with one large restaurant sign. Service on the Cape May Lewes Ferry was limited. High tide reached 8.21 feet above mean low water which was the highest tide since February 5, 1998. Peak wind gusts ranged from 51 mph in Wildwood to 57 mph in Cape May City. Rainfall totals ranged from 2.24 inches in Middle Township to 2.69 inches in Sea Isle City. The County had over \$90 million in damages from this event.
December 19-20, 2009	Winter Storm and Nor'Easter	N/A	N/A	A Nor'Easter brought heavy snow throughout New Jersey and produced strong gusty winds along the coastline. The heaviest snow fell along and east of the Interstate 95 corridor. Snowfall totals ranged from 3 inches in Sussex County to 24 inches across central and southern New Jersey. In addition to the snow and wind, the storm also led to minor tidal flooding in Atlantic and Cape May Counties. In Cape May County, the storm caused service interruptions on the 19th and 20th on the Cape May/Lewes Ferry. About 3,000 homes and businesses were without power in the County, with Ocean City being the hardest hit. The 9th Street Bridge was closed until the 21st in Ocean City because a tugboat broke free from its moorings and crashed against the bridge. The morning high tide on the 19th forced the closure of three bridges in Cape May County: The George Redding Bridge into Wildwood, The Townsend's Inlet Bridge between Avalon and Sea Isle City and the Beesleys Point Bridge between Upper Township and Somers Point. Snowfall totals in the County ranged from 1.5 inches in Scotch Bonnet (Borough of Stone Harbor) to 18.3 inches in Eldora (Dennis Township).
February 9-11, 2010	Winter Storm (Nor'Easter)	N/A	N/A	This was the second winter storm within a week. Blizzard conditions occurred at times across the extreme southern portion of the State of New Jersey. Snowfall totals averaged seven to 15 inches across northwest New Jersey, 12 to 20 inches across central New Jersey and six to 12 inches across the southern portion. Snowfall totals in Cape May County ranged from three inches in Ocean City to 7.1 inches in the City of Cape May. Overall, there was approximately \$500,000 in damages in the State.
December 26-27, 2010	Severe Winter Storm and Snowstorm (Nor'Easter)	DR-1954	Yes	A strong Nor'Easter impacted the mid-Atlantic region between December 26 th and December 27 th . This storm brought heavy bands of snow and strong winds across New Jersey, with snowfall totals ranging from 18 to 24 inches. Wind gusts of up to 61 mph were recorded in the coastal areas of the State. Portions of the Garden State Parkway were shutdown with hundreds of cars left stranded. Snow drifts reached 8 to 9 feet in some locations and turned a once clear, plowed road, into an impassable piece of asphalt. A state of emergency was declared for New Jersey. Snow totals in Cape May County ranged from 13 inches in Beesley's Point (Upper Township) to 26.5 inches in Dennisville (Dennis Township). Peak wind gust of 50 mph was recorded in the City of Cape May and 59 mph was recorded in the Borough of West Cape May.



Table G-4. Nor'Easter Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
March 6-7, 2013	Coastal Flooding / Nor'Easter	N/A	N/A	<p>An intense Nor'Easter brought strong to high winds across most of central and southern New Jersey as well as minor to moderate tidal flooding along Raritan Bay, lower Delaware Bay and on the ocean side. Peak wind gusts reached around 70 mph and downed trees, tree limbs and wires and caused some structural damage. About 50,000 homes and businesses lost power. Moderate to minor tidal flooding occurred during the high tide cycles on March 6th and 7th. Wave action and heavy rain also occurred during this storm. Additionally, the north to northeast winds prevented the back bays from emptying. Overall, the state had approximately \$745,000 in property damage from this event.</p> <p>In Cape May County, rainfall totals included 1.64 inches at Wildwood Crest and 1.46 inches at Middle Township. The highest tide reached 7.54 feet above MLLW in Cape May. High tide in Sea Isle City reached 7.29 feet above MLLW. Tidal flooding closed the George Redding Bridge (State Route 47). Roadway flooding was reported in Ocean City, Avalon and Stone Harbor. In Sea Isle City, vehicles were trapped in flood waters on Landis Avenue. In North Wildwood, Angelsea Drive was closed. Peak wind gusts included 69 mph in the Cities of Ocean City and Cape May, 67 mph in Cape May Harbor and 56 mph in West Cape May. The high winds blew off part of the roof of a condominium in Stone Harbor. The winds also downed poles and wires that resulted in the closure of Stone Harbor Boulevard. Additionally, the winds resulted in the cancellation of four crossings by the Cape May-Lewes Ferry. The County had approximately \$145,000 in property damage from this event.</p>
December 9, 2014	Nor'Easter and Flooding	N/A	N/A	<p>A strong Nor'Easter brought strong winds and minor to moderate tidal flooding the Upper Delaware Bay and around Raritan Bay. There was moderate tidal flooding in Lower Delaware Bay and Atlantic Coastal New Jersey. The storm also caused minor to moderate beach erosion. Peak wind gusts ranged from 45 to 55 mph and downed trees, limbs and power lines. Tidal flooding from this event impacted all of the coastal counties in New Jersey.</p> <p>In Cape May County, the highest tide was at the Cape May Ferry Terminal and was 7.78 feet above mean lower low water (moderate tidal flooding). Peak wind gusts of 46 mph was recorded at Cape May Harbor. In West Wildwood, the George Redding Bridge (State Route 47) was closed. In Ocean City, tidal flooding reached the doorways of businesses on West Avenue. Schools in the County were closed due to this event.</p>
October 2-3, 2015	Impacts from Hurricane Joaquin / Nor'Easter	N/A	N/A	<p>Hurricane Joaquin's path passed over or near parts of the northwestern Bahamas with maximum sustained winds near 130 mph, qualifying it as a Category 4 storm. Even though Joaquin's path was east of Cape May County, the County felt the impacts of this storm as Nor'Easter impacted the State of New Jersey. This event caused periods of heavy rain, strong to high winds, beach erosion, power outages, and minor to moderate flooding. In some areas of the state, there was significant beach erosion. In many locations, waves carried away significant amounts of sand from the beach and dune systems that had been built up after Hurricane Sandy. The hardest hit counties in New</p>



Table G-4. Nor'Easter Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>Jersey included Cape May, Ocean, and Monmouth. Governor Christie declared a state of emergency for New Jersey prior to the start of the storm. Rainfall totals in the state ranged from 1.5 to 3.5 inches. Overall, the state had \$32 million in damages.</p> <p>In Cape May County, severe beach erosion was reported in North Wildwood. The storm left five foot or higher cliffs carved out of the dunes along sections of the beach. In Middle Township, a vacant and structurally unsound home was dislodged from its pilings in the Grassy Sound Channel behind North Wildwood on October 2nd and it floated into the Intracoastal Waterway before it broke apart and settled into the marsh. In addition to beach erosion, coastal flooding impacted Cape May County as well. Low-lying areas in the Strathmere section of Upper Township and Sea Isle City experienced in flooding. Moderate tidal flooding was reported at the Cape May tide gage – 8.07 feet above MLLW was recorded at 12:42pm on October 2nd (moderate tidal flooding starts at 7.7 feet above MLLW). Measured wind gusts in the county included 62 mph in the City of Cape May and 44 mph at the Cape May County Airport. Overall, the County had approximately \$12 million in damages from this event.</p>
February 8-10, 2016	Nor'Easter & Coastal Flooding	N/A	N/A	<p>A powerful Nor'Easter brought blizzard conditions to eastern Long Island and southeast New England and brought strong winds, rain and snow to the southern half of New Jersey. In Cape May County, snowfall totals were a minimum (0.2 inches in Middle Township and 0.6 inches in Cape May City). However, flooding was an issue in the County. The NWS issued a coastal flood warning for the county. During high tide, numerous streams were flooded and had to be closed. Moderate coastal flooding was reported at the Cape May tide gage – 8.159 feet above MLLW was recorded at 1:54pm on February 9th (moderate tidal flooding starts at 7.7 feet above MLLW).</p>

Source(s): NOAA NCDC 2016; NWS 2016; FEMA 2016

- FEMA Federal Emergency Management Agency
- MLLW Mean Lower Low Water
- Mph Miles per hour
- NCDC National Climatic Data Center
- NOAA National Oceanic and Atmospheric Administration
- NWS National Weather Service
- N/A Not Applicable



Table G-5. Severe Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
September 10-11, 2009	Heavy Rains and Flooding	N/A	N/A	<p>A low pressure system moved into the northeast toward Delaware and New Jersey. It brought tidal flooding, beach erosion and wave action and had the highest impact on coastal areas. Peak wind gusts reached between 40 and 60 mph across the eastern parts of New Jersey with the highest gusts in Atlantic County. The combination of the persistent winds and heavy rain caused downed trees across the region. The largest effect along the shore was the wave action which led to erosion from the pounding surf.</p> <p>In Cape May County, there was heavy rain and strong winds that caused flash flooding and erosion. Most vertical cuts averaged one to two feet, but reached as high as four feet in Ocean City, six feet in Sea Isle City, and seven feet in Avalon. In Ocean City, geotubes were exposed at Surf Avenue. In Sea Isle City, vertical cuts reached six feet at the 88th Street groin. The Townsend Inlet Bridge was closed between Sea Isle City and Avalon. In Avalon itself, the vertical cuts reached 7 feet between 10th and 24th Streets. In Stone Harbor, dune fencing was lost and in North Wildwood, a remnant dune in the inlet disappeared. Peak wind gusts in the County ranged from 48 mph in Ocean City to 51 mph in Cape May. Minor tidal flooding occurred with the early morning high tide as it reached 6.96 feet above MLLW (minor tidal flooding starts at 6.7 feet above MLLW). Rainfall totals ranged from 3.71 inches in Ocean City to 4.58 inches in Eldora. Flash flooding was reported in Cape May City, Wildwood, Wildwood Crest, Villas (Lower Township), Rio Grande (Upper Township) and Ocean City. The County had approximately \$20,000 in property damage from this event.</p>
March 12-13, 2010	Severe Storms and Flooding	DR-1897	Yes	<p>The pounding surf and moderate to locally severe coastal flooding impacted areas along the New Jersey coastline. In Cape May County, vertical cuts averaged two to five feet, with dune cuts reported in Avalon, North Wildwood, and Cape May. Minor flooding occurred in parts of the County. The City of Cape May had one of the highest tides reported at 7.41 feet above mean lower low water. Rainfall totals in the County ranged from 3.22 inches in Wildwood to 4.55 inches in Woodbine. In addition to the heavy rains, there were strong winds that downed trees, limbs and utility poles, causing power outages. Peak wind gusts in the County included 62 mph in Ocean City. There were six injuries associated with this event. The County had approximately \$500,000 in property damage from this event.</p>
July 24, 2010	Thunderstorms	N/A	N/A	<p>Isolated thunderstorms moved impacted the southern half of New Jersey, causing damage in parts of Cape May County. A severe thunderstorm caused wind damage in Ocean City. Part of the roof was torn away from the Seabreeze Apartments and the roof of the Sun Aqua motel was dislodged. Homes were also damaged. On the beach, 13 lifeguard stands were destroyed and 12 beach patrol surf boats tumbled down the beach. A wind gust of 66 mph was recorded within Ocean City. This event caused approximately \$250,000 in property damage.</p>
August 27-28,	Hurricane Irene	DR-4021	Yes	<p>Hurricane Irene produced torrential downpour rains that resulted in major flooding and a</p>



Table G-5. Severe Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
2011				<p>number of record breaking crests on area rivers, tropical storm force wind gusts, one confirmed tornado, and a 3- to 5-foot storm surge that caused moderate to severe tidal flooding with extensive beach erosion. This resulted in thousands of mandatory and voluntary evacuations along the coast and rivers from storm surge and freshwater flooding, and widespread power outages that lasted for up to two weeks in areas that were subsequently impacted by the remnant moisture from Tropical Storm Lee in September. Moderate tidal flooding occurred along the tidal Delaware River and Delaware Bay and minor to moderate flooding occurred farther north along the Delaware River. Moderate to severe tidal flooding occurred along the Atlantic Coast and Raritan Bay. Waves were estimated to reach as high as 12 feet and offshore seas reached 25 feet. The wind and flooding across the state forced the closure of approximately 350 main roadways in the State including sections of I-287, the Garden State Parkway, and the New Jersey Turnpike. There were six direct deaths associated with this storm, all drownings. Governor Christie declared a state of emergency for all of New Jersey.</p> <p>In Cape May County, there were mandatory evacuations throughout the county. Vertical cuts averaged two to four feet. In the City of Cape May, a horizontal dune cut occurred on Poverty Beach. The highest wind gusts during Irene ranged from 53 mph in Wildwood to 75 mph at the Cape May Ferry Terminal (Lower Township). The Cape May Lewes Ferry suspended service for two days. The County also experienced moderate tidal flooding, with a peak tide of 8.55 feet above mean lower low water in the City of Cape May. Rainfall totals in the County ranged from 4.9 inches in Stone Harbor to 8.59 inches in Cedar Springs. The County had approximately \$5.5 million in damages from this event.</p>
June 29-30, 2012	Thunderstorms (Derecho)	N/A	N/A	<p>A cluster of thunderstorms near Eldora moved into western Cape May County. Wind gusts from this event were estimated from 65 to 70 mph as it moved eastward. The strong winds resulted in significant tree and power line damage across the County. There was widespread damage across Cape May County, downing trees, large tree limbs, and power lines. Thousands of customers were without power, with some areas experiencing power outages for up to one week. Several municipalities opened cooling centers as temperatures were in the 90s the following week. The County had approximately \$750,000 in property damage.</p>
August 11, 2012	Thunderstorms and Flash Flooding	N/A	N/A	<p>A series of thunderstorms preceding an approaching cold front that coincided nearly exactly with the afternoon high tide produced flash flooding along coastal sections of Atlantic and Cape May Counties. Doppler Radar storm total estimates reached between 2.0 and 2.5 inches right along the immediate shore from Ocean City (Cape May County) northeast into Atlantic City (Atlantic County).</p> <p>Thunderstorms with torrential downpours caused flash flooding in Ocean City, Sea Isle</p>



Table G-5. Severe Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				City and Middle and Lower Townships. Widespread roadway flooding was reported, especially in Ocean City. The heavy rain coincided with the afternoon high tide. Event precipitation totals included 1.78 inches in Dennis Township and 1.70 inches in Middle Township.
August 25-26, 2012	Thunderstorms and Flash Flooding	N/A	N/A	A series of slow moving thunderstorms brought around 5 inches of rain and caused flash flooding in Cape May County. In Avalon and Cape May, vehicles were submerged in flood waters. In North Wildwood and Wildwood Crest, numerous streets were flooded. Some businesses in Wildwood were flooded. Overall, the County had approximately \$150,000 in property damage from this event.
October 29, 2012	Hurricane Sandy	DR-4048	Yes	<p>Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths. A new temporary inlet formed in Mantaloking (Ocean County) where some homes were swept away. About 2.4 million households in the State lost power. It would take two weeks for power to be fully restored to homes and businesses that were inhabitable. Overall, Sandy caused approximately \$30 billion in damages in New Jersey and caused 12 deaths in the State.</p> <p>In Cape May County, rainfall totals ranged from 3.53 inches at Dias Creek to 11.91 inches at Wildwood Crest. Peak wind gusts in the County ranged from 60 mph in Ocean City to 81 mph in Dennisville. The maximum water level for the County was in Cape May and measured at 8.91 feet MLLW and a storm surge of 3.51 feet was reported. The County had approximately \$175 million in damages from this event. The County and its municipalities received over \$40 million in obligated reimbursements for damage caused by Hurricane Sandy. Additionally, the County received \$1.24 million in HMGP funds for the energy allocation initiative generator projects. The County also received over \$2.3 million for HMGP local projects/county infrastructure projects. Over \$780,000 was received by FEMA elevation grants for nine properties in the County.</p>
July 12, 2013	Thunderstorms and Flash Flooding	N/A	N/A	Bands of showers and thunderstorms with heavy rain associated with a low pressure system along the frontal boundary caused some poor drainage flooding in Mercer, Salem and Cumberland Counties and flash flooding in Cape May County. The heaviest rain fell during the afternoon in southern New Jersey and during the late afternoon and early evening in central New Jersey. Event precipitation totals averaged 1 to 2.5 inches in Mercer, Salem and Cumberland Counties as well as the northern half of Cape May County and 2.5 to 5.5 inches in the southern half of Cape May County.



Table G-5. Severe Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				Showers and thunderstorms with torrential downpours caused poor drainage flash flooding in the southern third of Cape May County. Event precipitation totals included 5.60 inches in Green Creek, 5.51 inches in Erma, 3.83 inches in Cape May, 3.71 inches in Cape May Harbor and 3.12 inches in Wildwood Crest.
July 10, 2014	Thunderstorms and Flash Flooding	N/A	N/A	Thunderstorms with heavy rain caused flash flooding along the barrier islands of Cape May County starting on the morning of the 10th. In Ocean City, water was reported as high as 3 feet on some roadways with flooding up the entrance of some homes and businesses. Rainfall totals included 4.48 inches at Beesley's Point, 3.65 inches in Woodbine, 2.44 inches in Upper Township and 2.32 inches in Dennis Township.
December 9, 2014	Nor'Easter and Flooding	N/A	N/A	A strong Nor'Easter brought strong winds and minor to moderate tidal flooding the Upper Delaware Bay and around Raritan Bay. There was moderate tidal flooding in Lower Delaware Bay and Atlantic Coastal New Jersey. The storm also caused minor to moderate beach erosion. Peak wind gusts ranged from 45 to 55 mph and downed trees, limbs and power lines. Tidal flooding from this event impacted all of the coastal counties in New Jersey. In Cape May County, the highest tide was at the Cape May Ferry Terminal and was 7.78 feet above mean lower low water (moderate tidal flooding). Peak wind gusts of 46 mph was recorded at Cape May Harbor. In West Wildwood, the George Redding Bridge (State Route 47) was closed. In Ocean City, tidal flooding reached the doorways of businesses on West Avenue. Schools in the County were closed due to this event.
August 21, 2015	Heavy Rain and Flooding	N/A	N/A	Scattered showers and thunderstorms moved across southeastern Pennsylvania and into central and southern New Jersey. The thunderstorms were accompanied by heavy rainfall which led to areas of flash flooding. There was also isolated wind damage associated with this event. Rainfall totals ranged from two to five inches where flash flooding occurred. In Cape May County, the storms moved across portions of the County and flash flooding was reported in the City of North Wildwood. Numerous streets in the City were flooded and impassable. Overall, rainfall totals in the County ranged from 2.61 inches in Middle Township to 3.03 inches in the City of North Wildwood.
October 5, 2015	Strong Winds and Rain	N/A	N/A	There were reports of moderate to severe beach erosion up and down the New Jersey coastline with the worst hit areas in Atlantic and Cape May Counties. On some beaches, the dunes were partially to completely washed away. There were numerous road closures. In Cape May County, a vacant house fell into flood waters after the structure was weakened. Tides reached 8.19 feet in North Wildwood. Wind gusts of 62 mph. The storm carved eight foot high cliffs in the dunes.

Source: FEMA 2015; NCDC 2015; NWS 2015; SPC 2015; NJ HMP 2014
DR Disaster Declaration (FEMA)





FEMA *Federal Emergency Management Agency*
Mph *miles per hour*
N/A *Not Applicable*
NCDC *National Climatic Data Center*
NHC *National Hurricane Center*
NJ *New Jersey*
NOAA *National Oceanic and Atmospheric Administration*
NWS *National Weather Service*



Table G-6. Severe Winter Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
December 19-20, 2009	Winter Storm and Nor'Easter	N/A	N/A	<p>A Nor'Easter brought heavy snow throughout New Jersey and produced strong gusty winds along the coastline. The heaviest snow fell along and east of the Interstate 95 corridor. Snowfall totals ranged from 3 inches in Sussex County to 24 inches across central and southern New Jersey. In addition to the snow and wind, the storm also led to minor tidal flooding in Atlantic and Cape May Counties.</p> <p>In Cape May County, the storm caused service interruptions on the 19th and 20th on the Cape May/Lewes Ferry. About 3,000 homes and businesses were without power in the County, with Ocean City being the hardest hit. The 9th Street Bridge was closed until the 21st in Ocean City because a tugboat broke free from its moorings and crashed against the bridge. The morning high tide on the 19th forced the closure of three bridges in Cape May County: The George Redding Bridge into Wildwood, The Townsend's Inlet Bridge between Avalon and Sea Isle City and the Beesleys Point Bridge between Upper Township and Somers Point. Snowfall totals in the County ranged from 1.5 inches in Scotch Bonnet (Borough of Stone Harbor) to 18.3 inches in Eldora (Dennis Township).</p>
February 5-6, 2010	Blizzard	DR-1889	No	<p>A major winter storm dropped 20 to 30 inches of snow across the southern third of New Jersey, 10 to 20 inches across the central third of New Jersey and less than 10 inches of snow north of Interstate 78 in the northern third of New Jersey. State of emergencies were declared throughout the State. A travel ban was in effect in Atlantic and Cape May Counties. Approximately 100,000 homes and businesses were without power in New Jersey, with a bulk of the outages reported in Atlantic and Cape May Counties. Overall, the impacted areas had approximately \$50 million in property damage.</p> <p>Cape May County was the hardest hit as the snow combined with blizzard winds which downed trees and poles. About 70,000 homes and businesses were without power; numerous shelters were opened. Snowfall totals ranged from 11 inches in northern Villas (Lower Township) to 21.8 inches in the Borough of West Cape May. Peak wind gusts ranged from 35 mph in the Borough of Woodbine to 50 mph in the City of Cape May.</p>
February 9-11, 2010	Winter Storm (Nor'Easter)	N/A	N/A	<p>This was the second winter storm within a week. Blizzard conditions occurred at times across the extreme southern portion of the State of New Jersey. Snowfall totals averaged seven to 15 inches across northwest New Jersey, 12 to 20 inches across central New Jersey and six to 12 inches across the southern portion. Snowfall totals in Cape May County ranged from three inches in Ocean City to 7.1 inches in the City of Cape May. Overall, there was approximately \$500,000 in damages in the State.</p>
December 26-27, 2010	Severe Winter Storm and Snowstorm (Nor'Easter)	DR-1954	Yes	<p>A strong Nor'Easter impacted the mid-Atlantic region between December 26th and December 27th. This storm brought heavy bands of snow and strong winds across New Jersey, with snowfall totals ranging from 18 to 24 inches. Wind gusts of up to 61 mph were recorded in the coastal areas of the State. Portions of the Garden State Parkway were shutdown with hundreds of cars left stranded.</p>



Table G-6. Severe Winter Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				Snow drifts reached 8 to 9 feet in some locations and turned a once clear, plowed road, into an impassable piece of asphalt. A state of emergency was declared for New Jersey. Snow totals in Cape May County ranged from 13 inches in Beesley's Point (Upper Township) to 26.5 inches in Dennisville (Dennis Township). Peak wind gust of 50 mph was recorded in the City of Cape May and 59 mph was recorded in the Borough of West Cape May.
January 3, 2014	Winter Storm / Coastal Flooding	N/A	N/A	A winter storm brought five to nine inches of snow across most of New Jersey and about 10 inches in northern Ocean County and in Monmouth County. This caused hazardous travel conditions. Governor Christie declared a state of emergency in New Jersey. There were numerous school, government and business closures. Warming centers were opened. Overall snow totals ranged from 5.5 inches in Morris and Warren counties to 10.7 inches in Monmouth County. Wind gusts ranged from 40 mph in Monmouth County to 52 mph in Cape May County. In Cape May County, snowfall totals ranged from eight to nine inches. Peak wind gusts of 52 mph was measured in Cape May City. Tidal flooding also impacted Cape May County which left many roadways icy due to the low temperatures that occurred on the 3rd. Moderate tidal flooding occurred in the County; high tide reached 7.27 feet above MLLW at the City of Cape May.
January 26, 2015	Winter Storm / Coastal Flooding	N/A	N/A	A winter storm brought heavy snow and minor tidal flooding to parts of New Jersey. Snowfall in northwest New Jersey averaged one to five inches. A state of emergency was declared and a driving ban was enacted. Trains and ferries were operating on a modified schedule. There was minor coastal flooding during the high tide cycle during the predawn hours of the 27th, as well as some beach erosion. Snow began falling in the state during the early morning on the 26th. Precipitation started falling as rain in the southern half of the state before it turned over to snow. Overall snowfall totals across New Jersey ranged from 0.9 inches in Cumberland County to 12 inches in Monmouth County. In addition to snowfall, the storm system caused minor tidal flooding during the early morning high tide cycle on the 27th. The highest tide was reported at Sandy Hook (Monmouth County) which reached 7.17 feet above MLLW. In Cape May County, the highest tide at Cape May Ferry Terminal (City of Cape May) was 7.05 feet above MLLW (minor tidal flooding threshold is 6.70 feet above MLWW). Other locations in the County experienced tidal flooding as well and included the following: Ocean City (6.12 feet above MLLW), Borough of Avalon (6.22 feet above MLLW), Borough of Stone Harbor (6.66 feet above MLLW), and Cape May Harbor (6.53 feet above MLLW).
January 22-24, 2016	Winter Storm & Coastal Flooding (Winter Storm Jonas)	DR-4264	Yes	Snow began to develop on January 22 nd from south to north. Across the coastal regions, the snow changed over to rain which limited the totals for those areas. There were intense bands of snow with rates of two to four inches per hour in north-central New Jersey and the Lehigh Valley in Pennsylvania. In addition to snow, there were strong wind gusts that topped out between 30 and 50 mph for most of the region. At the airports, most flights were cancelled due to the storm. Travel



Table G-6. Severe Winter Weather Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
				<p>became nearly impossible at times for most of the areas impacted. Moderate to major tidal flooding occurred along the New Jersey and Delaware beaches which resulted in severe beach erosion and some property damage in coastal communities. Snowfall totals ranged from two to 32 inches, with the highest totals from Berks, Pennsylvania northwest to Allentown (Pennsylvania) and then into north-central New Jersey.</p> <p>In Cape May County, snowfall totals ranged from seven inches in the City of Cape May to 11.3 inches in Wildwood Crest. Peak wind gusts ranged from 50 mph in Cape May Point to 64 mph in Strathmere. In addition to snow and wind, coastal flooding impacted the county. In Cape May, there was a record storm surge of 9.4 feet. The tides in the County were as high as 10 feet in some parts which flooded garages and ground floors of buildings. Flood damage was significant as water levels exceeded those observed during Sandy and ranked in the top 10 on record. Beach erosion was moderate to major. Major tidal flooding was reported at the Cape May tide gage – 8.98 feet above MLLW was recorded at 1:30pm on January 23rd (major tidal flooding starts at 8.7 feet above MLLW).</p>
February 8-10, 2016	Nor'Easter & Coastal Flooding	N/A	N/A	<p>A powerful Nor'Easter brought blizzard conditions to eastern Long Island and southeast New England and brought strong winds, rain and snow to the southern half of New Jersey. In Cape May County, snowfall totals were a minimum (0.2 inches in Middle Township and 0.6 inches in Cape May City). However, flooding was an issue in the County. The NWS issued a coastal flood warning for the county. During high tide, numerous streams were flooded and had to be closed. Moderate coastal flooding was reported at the Cape May tide gage – 8.159 feet above MLLW was recorded at 1:54pm on February 9th (moderate tidal flooding starts at 7.7 feet above MLLW).</p>

Source(s): NOAA NCDC 2016; NWS 2016; FEMA 2016

- FEMA Federal Emergency Management Agency
- MLLW Mean Lower Low Water
- Mph Miles per hour
- NCDC National Climatic Data Center
- NOAA National Oceanic and Atmospheric Administration
- NWS National Weather Service
- N/A Not Applicable



Table G-6. Tsunami Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
June 13, 2013	Tsunami Runup	N/A	N/A	Tsunami-like waves were observed along the east coast of the United States after a tsunami was reported in the northwestern Atlantic Ocean. A large wave in Cape May County was observed, approximately six feet and spanned across the Barnegat Inlet. According to NOAA, the wave occurred in conjunction with a reversal of the current such that even though the tide was going out, a strong surge was entering the inlet. This surge carried the divers back over the submerged reef and into the inlet from where they were picked up. On the south jetty three people were swept off the rocks which were 5 to 6 feet above sea level at the time. At least two were injured requiring medical treatment. There was no more strong activity after about 5 minutes.



Table G-8. Wildfire Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
January 24, 2009	Brush Fire	N/A	N/A	Structure fire and one-acre brush fire in Erma (Lower Township)
April 17, 2009	Brush Fire	N/A	N/A	A brush fire was reported on Ludlam Avenue in Erma (Lower Township)
May 22, 2009	Brush Fire	N/A	N/A	A brush fire was reported at the George Reading Bridge in Erma (Lower Township).
June 27, 2009	Brush Fire	N/A	N/A	A brush fire was reported at the George Reading Bridge in Erma (Lower Township).
March 20, 2010	Brush Fire	N/A	N/A	A brush fire was reported at Tecumseh Circle in Erma (Lower Township).
April 11, 2010	Brush Fire	N/A	N/A	A brush fire was reported at Route 9 and Kathryn Boulevard in Erma (Lower Township)
June 17, 2010	Brush Fire	N/A	N/A	A brush fire was reported at Seashore Road in Erma (Lower Township)
June 18, 2010	Brush Fire	N/A	N/A	A brush fire was reported at Shawcrest Island in Erma (Lower Township)
July 1, 2010	Brush Fire	N/A	N/A	A brush fire was reported along the Garden State Parkway in Erma (Lower Township)
July 5, 2010	Brush Fire	N/A	N/A	A brush fire was reported at Lake Laurie in Erma (Lower Township)
November 18, 2010	Brush Fire	N/A	N/A	A brush fire was reported at Bennetts Crossing in Erma (Lower Township)
February 19, 2011	Wildfire	N/A	N/A	The combination of strong west to northwest winds, low humidity levels, and dry weather helped lead to the rapid spread of wildfires across the State of New Jersey. Overall, 10 wildfires were reported in the State. In Cape May County, a wildfire was reported in Dennis Township and it took six fire departments two hours to contain the fire. It started near a shed, which was destroyed, and spread into nearby brush. There was approximately \$10,000 in property damage from this wildfire event.
April 3, 2011	Brush Fire	N/A	N/A	A brush fire in the woods near Dennis Township Primary School on Hagen Road was reported. A fire truck from the Dennis Township Fire Department and several NJFFS units were utilized to extinguish the fire.
April 20, 2011	Brush Fire	N/A	N/A	A brush fire was reported at mile mark 0 on the Garden State Parkway and Route 109 in Erma (Lower Township)
April 27, 2011	Brush Fire	N/A	N/A	A brush fire was reported at the intersection of Ocean Drive and 2 Mile Dock Road in Erma (Lower Township).
May 11, 2011	Brush Fire	N/A	N/A	A brush fire was reported at Seashore Road in Erma (Lower Township).
June 5, 2011	Brush Fire	N/A	N/A	A brush fire was reported at Weeks Landing Road in Erma (Lower Township).
June 29, 2011	Brush Fire	N/A	N/A	A brush fire was reported at Shunpike and Clary Court in Erma (Lower Township).
July 15, 2011	Brush Fire	N/A	N/A	A brush fire was reported on Route 47 in the area of Bridge in Erma (Lower Township).



Table G-8. Wildfire Events in Cape May County, 2009 to 2016

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Cape May County Designated?	Description
August 27, 2011	Brush Fire	N/A	N/A	A brush fire was reported on Ocean Drive, just east of Canyon Club in Erma (Lower Township).
August 30, 2011	Brush Fire	N/A	N/A	A brush fire was reported at mile mark 0.5 south on the Garden State Parkway in Erma (Lower Township).
March 7, 2012	Brush Fire	N/A	N/A	A brush fire was reported at the intersection of Cresse Avenue and the Garden State Parkway in Erma (Lower Township).
April 2012	Wildfires	N/A	N/A	The NWS implemented a fire warning for all of New Jersey and Delaware and portions of Maryland, Pennsylvania, and New York. There were more than two dozen brush/wildfires across the State in a matter of a week. Several wildfires occurred in Cape May County.
April 25, 2012	Brush Fire	N/A	N/A	A brush fire was reported at the intersection of Garden State Parkway and Weeks Landing Road in Erma (Lower Township).
July 27, 2012	Brush Fire	N/A	N/A	A brush fire was reported in the area of Ocean Drive near Canyon Club in Erma (Lower Township).
April 22, 2013	Brush/Grass Fire	N/A	N/A	A brush/grass fire was reported on Erma Lane Erma (Lower Township).
April 27, 2013	Brush Fire	N/A	N/A	A large brush fire on the 27th forced the closure of Ferry Road near the terminal of the Cape May-Lewes Ferry in West Cape May. Little if any rain fell during the preceding week in Cape May County.
July 30, 2013	Brush Fire	N/A	N/A	A small brush fire was reported off of Fulling Mil Road in Erma (Lower Township).
September 18, 2013	Brush Fire	N/A	N/A	A brush fire on the Garden State Parkway southbound was reported in Lower Township, south of Exit 4 (NJ 47).
October 18, 2013	Brush Fire	N/A	N/A	A brush fire was reported on Ocean Drive in Erma (Lower Township).
March 14, 2014	Brush Fire	N/A	N/A	A brush fire was reported on Saxon Avenue in Erma (Lower Township).
May 4, 2015	Brush Fire	N/A	N/A	A brush fire was reported in the vicinity of the Garden State Parkway and North Wildwood Boulevard in Cape May Courthouse (Middle Township).
June 20, 2015	Brush Fire	N/A	N/A	A brush was reported in Cape May Courthouse (Middle Township) behind Catalina Motel.
January 3, 2016	Brush Fire	N/A	N/A	A brush fire was reported in West Cape May at Sixth Avenue.

Source: NOAA 2016
 FEMA Federal Emergency Management Agency
 NOAA National Oceanic and Atmospheric Administration