APPENDIX A. PLAN ADOPTION

The Essex County and municipal adoption resolutions will be included in this appendix upon receipt of the Federal Emergency Management Agency (FEMA) Approval Pending Adoption (APA) status. Please refer to Section 8 (Planning Partnership) for additional information on plan adoption procedures.

This appendix also includes an example resolution to be submitted by Essex County and participating jurisdictions authorizing adoption of the Essex County Hazard Mitigation Plan update.

RESOLUTION NO. XXXX-XX

A RESOLUTION OF THE Governing Body OF THE Jurisdiction Name

AUTHORIZING THE ADOPTION OF THE

2020 ESSEX COUNTY, NEW JERSEY HAZARD MITIGATION PLAN UPDATE

WHEREAS, all jurisdictions within Essex County have exposure to hazards that increase the risk to life, property, environment, and the County and local economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; a coalition of Essex County municipalities with like planning objectives has been formed to pool resources and create consistent mitigation strategies within Essex County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

NOW, THEREFORE, BE IT RESOLVED that the [**jurisdiction name**]:

1) Adopts in its entirety, the 2020 Essex County Hazard Mitigation Plan Update (the "Plan") as the jurisdiction's Hazard Mitigation Plan and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.

2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.

3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.

4) Will continue its support of the Mitigation Planning Committee as described within the Plan.

5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

PASSED AND ADOPTED on this Xst, Xnd, Xrd, Xth day of MONTH, YEAR, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____

Elected Official, City/Town/Borough of _____

ATTEST: _____

Clerk, City/Town/Borough of _____

TOWNSHIP OF CEDAR GROVE
ESSEX COUNTY NEW JERSEY

AGENDA ITEM # 6(a) **JUNE 1, 2020**

RESOLUTION OF THE TOWNSHIP COUNCIL OF THE TOWNSHIP OF CEDAR GROVE AUTHORIZING THE ADOPTION OF THE 2020 ESSEX COUNTY, NEW JERSEY HAZARD MITIGATION PLAN UPDATE

WHEREAS, all jurisdictions within Essex County have exposure to hazards that increase the risk to life, property, environment, and the County and local economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; a coalition of Essex County municipalities with like planning objectives has been formed to pool resources and create consistent mitigation strategies within Essex County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

NOW, THEREFORE, BE IT RESOLVED that the Township of Cedar Grove:

1) Adopts in its entirety, the 2020 Essex County Hazard Mitigation Plan Update (the "Plan") as the jurisdiction's Hazard Mitigation Plan and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.

2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.

3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.

4) Will continue its support of the Mitigation Planning Committee as described within the Plan.

5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

INTRODUCED: Councilman Cicala
SECONDED: Deputy Mayor Peterson

ROLL CALL VOTE				
COUNCILMEMBER	YES	NO	ABSTAIN	ABSENT
Cicala	X			
Maceri	X			
Tanella	X			
Peterson	X			
Vargo	X			

0601045msc

I HEREBY CERTIFY the foregoing to be a true copy of a resolution adopted by the Township Council of Cedar Grove, in the County of Essex, at its meeting held on June 1, 2020.

Kathleen R. Stutz

Kathleen R. Stutz
Township Clerk

TOWNSHIP OF FAIRFIELD
RESOLUTION #2020-258

RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWNSHIP OF FAIRFIELD AUTHORIZING THE ADOPTION OF THE 2020 ESSEX COUNTY, NEW JERSEY HAZARD MITIGATION PLAN UPDATE

WHEREAS, all jurisdictions within Essex County have exposure to hazards that increase the risk to life, property, environment, and the County and local economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; a coalition of Essex County municipalities with like planning objectives has been formed to pool resources and create consistent mitigation strategies within Essex County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

NOW, THEREFORE, BE IT RESOLVED that the Township of Fairfield

1) Adopts in its entirety, the 2020 Essex County Hazard Mitigation Plan Update (the "Plan") as the jurisdiction's Hazard Mitigation Plan and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
5) Will help to promote and support the mitigation successes of all participants in this Plan.
6) Will incorporate mitigation planning as an integral component of government and partner operations.
7) Will provide an update of the Plan in conjunction with the County no less than every five years.

***

I hereby certify that the above resolution was adopted by the Mayor and Council of the Township of Fairfield at a meeting of said Governing Body held on May 26, 2020.

MAYOR OF THE TOWNSHIP OF FAIRFIELD

MUNICIPAL CLERK OF THE TOWNSHIP OF FAIRFIELD

Resolution By: **Councilman Morgan**
Seconded By: **Councilman LaForgia**

ROLL CALL VOTE

GOVERNING BODY	AYES	NAYS	ABSTAIN	ABSENT	NOT VOTING
COUNCIL PRESIDENT JOSEPH CIFELLI	X				
COUNCILMAN THOMAS J. MORGAN	X				
COUNCILMAN JOHN LAFORGIA	X				
COUNCILMAN MICHAEL B. MCGLYNN	X				
MAYOR JAMES GASPARINI	x				

Cc: Police Dept Administration Finance
S:\reso 2020\OEM Accepting the All Hazard mitigation plan update May 26, 2020

THE MAYOR AND BOROUGH COUNCIL
of the
BOROUGH OF GLEN RIDGE
County of Essex
State of New Jersey

Tuesday, May 26, 2020

RESOLUTION NO. 90-20

Offered by Councilor **MORROW**
Seconded by Councilor **LISOVICZ**

2020 ESSEX COUNTY, NEW JERSEY
HAZARD MITIGATION PLAN UPDATE

WHEREAS, all jurisdictions within Essex County have exposure to hazards that increase the risk to life, property, environment, and the County and local economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; a coalition of Essex County municipalities with like planning objectives has been formed to pool resources and create consistent mitigation strategies within Essex County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

NOW, THEREFORE, BE IT RESOLVED that the Borough of Glen Ridge:

1) Adopts in its entirety, the 2020 Essex County Hazard Mitigation Plan Update (the "Plan") as the jurisdiction's Hazard Mitigation Plan and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
5) Will help to promote and support the mitigation successes of all participants in this Plan.
6) Will incorporate mitigation planning as an integral component of government and partner operations.
7) Will provide an update of the Plan in conjunction with the County no less than every five years.

Certified as a true and exact copy of the Resolution adopted by The Council on this 26th day of May 2020.

Tara Ventola
Deputy Clerk

APPENDIX B. PARTICIPATION DOCUMENTATION

This appendix provides documentation to illustrate the significant efforts undertaken to support a broad and inclusive engagement of the participants during this hazard mitigation planning process.

B.1 Meeting and Workshop Participation

Table B-1 provides a broad overview of state, county, municipal and stakeholder personnel that attended meetings and workshops throughout the Essex County HMP update planning process. All jurisdictions were encouraged to attend the kick-off meeting, risk assessment meeting, mitigation workshop and meet individually with the contract consultant. As discussed in Section 2 (Planning Process), primary and secondary points of contact were identified for each jurisdiction, but moreover, these points of contact were asked to work with their 'mitigation team' to ensure input was provided across all jurisdiction departments. Table 9.X-19 in each jurisdictional annex (Section 9) summarizes the additional individuals that participated in each jurisdiction, as well as their method of participation. During the planning process the consultant contacted each participant to offer support, explain the process, and 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 the Steering Committee. Letters of Intent to Participate indicating municipal planning efforts are included in this appendix. The Steering Committee served as the core of the working group. Participation is defined as having input to the hazard analysis (providing critical facility, hazard event, vulnerability data, hazard ranking), contributed to the Strengths, Weaknesses, Obstacles and Opportunities exercise, and as having participated in the mitigation workshop or alternate annex meetings as described in the HMP for the purpose of creating a mitigation strategy to be included in each municipalities annex in Section 9.

Table B-1. Meeting Participation

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
Essex County														
Amir Jones	Undersheriff/Deputy OEM Coordinator	X				X		X		X		X		
Ed Esposito	Captain, Sheriff's Office	X	X			X	X	X	X	X	X	X		X
Stephanie Knox, CEM	Detective, Sheriff's Office/OEM/Planning/CERT	X				X	X	X	X	X			X	X
Dr. Joseph Scarpelli	Mental Health Administrator					X		X						
Lauren Agnew	PIO City Executive					X		X		X				
Anthony Puglisi	Public Information Officer	X				X		X		X				
Fitzgerald Figliuolo	OEM Deputy Coordinator					X		X		X	X	X	X	
Ryan Peter	EMS and Preparedness	X				X				X	X	X		
Dorothy Landrum	OEM Admin					X				X				
Jose B. Torres	Essex OEM					X				X		X		
Sanjeev Varghese	Public Works Director and County Engineer	X		X										
Joseph DiVincenzo	County Executive	X												
Armando Fontoura	Sheriff/County OEM Coordinator	X												
Theodore Stephens, Esq	County Prosecutor	X												
Mitchell McGuire	Chief of Detectives	X												
Michael Capodanno	Director Homeland Security	X				X								X
Robert Jackson, AB, MBA	County Administrator	X												
Julias Coltre, QPA	Deputy County Administrator	X												
Daryl Johnson	Haz Mat/Bomb Technician	X				X								X

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
David Antonio	County DPW-Planner	X				X			X					
Darren Marshall	IT/GIS Coordinator	X												
Lisa E. Rodriquez, PE	Supervising Engineer, DPW	X				X			X					
Jerry Grande	Director of County Roads and Bridges	X												
Tim Walker	County Risk Manager	X												
Kevin Lynch	Public Information Officer	X												
Daniel Salvante	Director of Parks Department	X				X			X					
John Goncalves	ECSO					X					X	X		
Larry Taylor	Essex County Sheriff's Office					X								X
Town of Bellville														
Nick Breiner	Deputy Coordinator/Police Dept			X		X		X			X	X		
Martin Lutz	Deputy Fire Chief/OEM Coordinator		X			X		X		X		X		X
Frank Delorenzo	Construction Code Official				X	X								
Township of Bloomfield														
Jason Bhulai	OEM Rep					X		X						
Martin Lutz	OEM/Fire					X				X				
Fred Menzel	OEM Coordinator		X											
Thomas Pelaia	Deputy OEM Coordinator			X										
Paul Lasek	Township Engineer				X									
Borough of Caldwell														
Larry Peter	OEM				X			X						

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
Mark Guiliano	Fire Official/Deputy Emergency Management Coordinator		X			X				X		X		
Brian Maclay	Deputy Emergency Management Coordinator			X		X				X				
Mario Bifalco	Caldwell DPW				X									
Township of Cedar Grove														
Jeffrey McElroy	OEM Coordinator		X			X		X		X				
John D'Ascensio	Deputy OEM Coordinator			X		X						X	X	
Alex Palumbo	Township Engineer				X									
City of East Orange														
Natasha Ortiz	OEM					X		X		X		X		
R. David Williams	OM Deputy Coordinator			X		X		X		X		X		
Solomon Steplight	OEM Coordinator		X											
Christopher Coke	Director-Dept of Public Works				X									
Borough of Essex Fells														
John Schmunk	OEM			X		X		X						
Jim Egan	Director OEM/EM Coordinator		X			X				X				
Evan Jacobs	Neglia Engineering				X									
Township of Fairfield														
William Smith	OEM Coordinator, Emergency Management		X			X		X	X	X		X	X	X
Steve Bury	Engineer, Engineering Department			X										
Phil Cheff	Construction Official, Bldg Dept				X									

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
Borough of Glen Ridge														
Michael Zichelli	Deputy Administrator / Director of Planning			X		X		X						
Michael Rohal	Borough Admin/Eng/Clerk/QPA/OEM Coordinator		X		X									
Sean Quinn						X						X		
Township of Irvington														
John Wiggins	Municipal Engineer				X	X		X		X				
Tony Outerbridge	Fire Dept					X						X		
John F Brown	OEM Coordinator		X											
Antonio Gary	Fire Chief/Deputy Coordinator			X										
Township of Livingston														
Christopher C. Mullin	Fire Chief, Fire Official, OEM Coordinator		X			X		X		X			X	
Jeannette Harduby	Livingston Engineering				X	X						X		
Rossana Mattia	Administrative Assistant to Fire Chief			X										
Township of Maplewood														
Paul Kittner	Township Engineer, Engineering Department				X	X		X			X	X		
Christopher Dolias	Maplewood PD					X		X						
Jim DeVaul	Chief Police			X		X				X		X		
Sonia Viveiros	Business Administrator/Admin		X											
Township of Millburn														
Captain Chris Beady	OEM Coordinator, Milburn Fire		X			X		X		X		X	X	

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
Robert Echavarria	Chief, Millburn Fire					X			X	X	X	X		X
Alex McDonald	Deputy Coordinator/Business Administrator			X										
Martha Callahan	Township Engineer				X									
Township of Montclair														
Rob Bianco	EMC, Department of Community Services		X			X		X				X		
John Herrman	Deputy OEM Coordinator/Fire Chief/DEMC			X		X		X				X		
Brian Wilde	Deputy Chief					X				X		X		
John Herrmann	Fire Chief/DEMC					X				X				
Norberto Hernandez	Township Engineer				X									
City of Newark														
Dorian Herrell	OEM Coordinator		X			X		X				X		
Tanya Fraser	Disaster Preparedness Planner					X		X		X		X		
Juba Dowdell, CPM	Newark Municipal OEM/Deputy Coordinator			X										
Phil Scott	Director/Engineering Dept				X									
Borough of North Caldwell														
Kevin O'Sullivan	Borough Administrator/OEM Coordinator/Admin		X			X		X				X		
John D'Ascensio	OEM Coordinator			X		X		X		X				
Paul Milani	Construction Official				X									
Township of Nutley														
Salvatore Ferraro	Engineering Coordinator/Engineering / DPW		X		X	X		X		X		X		

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
William Cassidy	OEM Coordinator			X		X		X		X		X		
City of Orange														
Elvin Padilla Jr.	Fire Captain/OEM Deputy Coordinator			X		X		X		X		X		
Raymond Wingfield	Assistant Director DPW/OEM Coordinator		X											
Pamela Hilla	Remmington & Vernick Engineers				X									
Borough of Roseland														
Gary Schall	Superintendent DPW			X		X		X				X		
John Yakimik	Engineer					X		X						
Christopher Gilehelt	DPW Assistant Spt					X				X				
John Matheis	OEM/Coordinator					X				X				
Tom Jacobson	Construction Official		X											
Ralph Tango	Borough Engineer				X									
Township of South Orange Village														
Adam D. Loehner	OEM/Village Administrator		X			X		X		X				
Salvatore Rendo	Village Engineer			X	X	X						X		
Township of Verona														
Joel Martin	OEM Coordinator, Police Department		X			X		X		X				
Matthew Carvallo	OEM Deputy					X		X						
Chris Kiernan	Police Chief			X										
Michael DeCarlo	Flood Plain Administrator				X									
Township of West Caldwell														

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
Larry Peter	Emergency Management Coordinator		X			X		X		X				
John Medina	Deputy Emergency Management Coordinator			X		X						X		
Robert McLoughlin	Construction Official				X									
Township of West Orange														
Daniel Shelley	Deputy Fire Chief, OEM Coordinator		X			X		X		X		X		
Leonard Lepore, Dir	Municipal Engineer			X	X									
State of New Jersey														
Chris Testa	Mitigation Unit Manager					X		X						
Essex Regional Health														
Gary Garotano	Public Health Emergency Coordinator	X				X				X				
Carrie Nawrocki, PHO	Essex Regional Health	X												
Rich Budris	Essex Regional Health					X			X					
Stakeholders														
Mohammad Hussain	Jersey Central Power & Light Representative					X		X						
Eric Boston	PSE&G Ops OEM					X							X	
Rob Thomas	Energy & Environment / Newark, NJ					X							X	
Amy Rowe	County Agent / Rutgers					X							X	
Sheila Baker Gyirel	Municipal Environment Specialist / ANJEC					X							X	
Stephanie Chas	ECSO					X							X	
Jason Gleason	Director / Montclair					X							X	
Eric Holiday	OEM Specialist / NJ Transit Police					X							X	

Name	Title / Position	Steering Committee Member	Primary POC	Secondary POC	NFIP Floodplain Administrator	Attended Meeting(s)	Attended Project Manager Kickoff Meeting (6/11/19)	Attended Kickoff Meeting #1 (7/18/19) - *open to public*	Attended Steering Committee Meeting (8/27/19)	Attended Risk Assessment and SWOO Meeting (9/19/19) - *open to public*	Attended Steering Committee Meeting (10/24/19)	Attended Mitigation Strategy Workshop (10/24/19) - *open to public*	Attended Stakeholder Workshop (11/14/19)	Attended Steering Committee Draft Plan Review Meeting (2/4/20) – *open to public*
Bob Glantzberg	Director of OPS / Transcom					X							X	
Brad Mason	Senior Director / NJ Transit					X							X	

B.2 Letters of Intent to Participate

Municipalities were provided a copy of the Planning Partner Expectations and asked to formally notify the County of their intent to participate via a Letter of Intent to Participate and to identify a primary and secondary planning point of contact to serve on a Planning Committee and represent the interests of their respective community. In addition, each municipal Floodplain Administrator (FPA) was identified and requested to actively participate in the planning process. The signed Letters of Intent to Participate are included in this section.

Date: June 18,2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Belleville

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Belleville, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Belleville:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Martin Lutz **Position/Department: Deputy Fire Chief/OEM Coordinator**

Phone Number:973-202-1355/973-450-3368 **Email Address:mlutz@bellevillefiredept.org**

Alternate/Secondary POC:Nick Breiner **Position/Department: Deputy Coordinator/Police Dpt.**

Phone Number:973-930-6024/973-450-3333 **Email Address: nbreiner@bellevillenj.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Frank Delorenzo **Position/Department: Consrtuction Code Official**

Phone Number:973-450-3410 **Email Address: fdelorenzo@bellevillenj.net**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Martin Lutz
Deputy Fire Chief/OEM Coordinator

Fred Menzel
Coordinator

Thomas Pelaia
Deputy Coordinator



Telephone
(973) 680-4177
Fax
(973) 680-4165

TOWNSHIP OF BLOOMFIELD
OFFICE OF EMERGENCY MANAGEMENT

Bloomfield, New Jersey 07003-3487

Date: June 17, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Bloomfield

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Bloomfield, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality Bloomfield

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas

  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary PO C:Fred Menzel **Position/Department: OEM Coordinator**

Phone Number: 973=418=2108 **Email Address: BVESFMEN@aol.com**

Alternate/Secondary POC: Thomas Pelaia **Position/Department: Deputy OEM Coordinator**

Phone Number: 073=332=2855 **Email Address: tbone1019@comcast.net**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Paul Lasek **Position/Department: Township Engineer**

Phone Number: 973-980-409 **Email Address: plasek@bloomfieldtwpnj.com**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Fred Menzel
OEM Coordinator

Borough of Caldwell

One Provost Square • Caldwell, NJ 07006 • 973-226-6100 • Fax 973-403-1355

Date: 6/11/2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Caldwell.

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Caldwell, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Caldwell:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development

- Identification of natural hazard risk areas
- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Mark Guiliano – Emergency Management Coordinator

Phone Number: (973) 403-4629 **Email Address: fireofficial@caldwell-nj.com**

Alternate/Secondary POC: Brian Maclay – Deputy Emergency Management Coordinator

Phone Number: (973) 403-4629 **Email Address: fireinspector@caldwell-nj.com**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA
MARIO BIFALCO

Position/Department:
CALDWELL DPW

Phone Number:
(973) 403-4640

Email Address:
'MBIFALCO@CALDWELL-NJ.COM

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Mark Guiliano
Caldwell OEM Coordinator

Township of Cedar Grove
MUNICIPAL BUILDING
525 POMPTON AVENUE
CEDAR GROVE, N. J. 07009

AREA CODE (973) 239-1410

Date: 06/14/2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Township of Cedar Grove

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Township of Cedar Grove is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Township of Cedar Grove:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development

- Identification of natural hazard risk areas
- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Jeffrey McElroy **Position/Department: OEM Coordinator**

Phone Number: 973-239-4100 **Email Address: jmcelroy@cedargrovepd.org**

Alternate/Secondary POC: John D'Ascensio **Position/Department: Deputy OEM Coordinator**

Phone Number: 973-239-1410 **Email Address:**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Alex Palumbo **Position/Department: Township Engineer**

Phone Number: 973-239-1410 **Email Address: engineer@cedargrovenj.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Thomas Tucci
Township Manager

OFFICE OF EMERGENCY MANAGEMENT
THE CITY OF EAST ORANGE
44 CITY HALL PLAZA
EAST ORANGE, NEW JERSEY 07018
PHONE 973-266-5140 WWW.EASTORANGE-NJ.GOV FAX 862-930-7804

SOLOMON STEPLIGHT
CITY ADMINISTRATOR

TED R. GREEN
MAYOR

Date: 6/13/2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of The City of East Orange

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of The City of East Orange, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of The City of East Orange:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).

- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Solomon Steplight **Position/Department: OEM Coordinator**

Phone Number: 973-266-5310 **Email Address: Solomon.Steplight@eastorange-nj.gov**

Alternate/Secondary POC: R. David Williams Position/Department: Deputy OEM Coordinator

Phone Number:973-266-5507 **Email Address: David.Williams@eastorange-nj.gov**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA Christopher Coke **Position/Department: Director-Dept of Public Works**

Phone Number: 973-266-5330 **Email Address: Christopher.Coke@eastorange-nj.gov**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Solomon Steplight
City Administrator/ OEM Coordinator

ONECITY ONECOMMUNITY ONEGOAL | Progress

ESSEX FELLS POLICE DEPARTMENT

255 ROSELAND AVENUE • ESSEX FELLS, NJ 07021
973-226-3000 • FAX 973-228-6296

William R. Theilacker
Chief of Police

Date: June 13, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Essex Fells Borough.

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Essex Fells Borough, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Essex Fells Borough:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:

- Structure and facility inventory data
- Identification of new development and anticipated development
- Identification of natural hazard risk areas
- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: James Egan **Position/Department: E.M. Coordinator**

Phone Number: 973-518-3011 **Email Address: jimegan103@gmail.com**

Alternate/Secondary POC: Sgt. John R. Schmunk Position/Department:Deputy EMCoordinator

Phone Number: 201-615-2397 **Email Address: jschmunk@essexfellspd.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Evan Jacobs
Neglia Engineering 34 Park Ave PO Box 426 Lyndhurst, NJ 07071

Phone Number: 201-939-8805 **Email Address: ejacobs@negliaengineering.com**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Sgt. John R. Schmunk
Deputy Emergency Management Coordinator

JAMES GASPARINI
MAYOR

TOWNSHIP OF FAIRFIELD

230 FAIRFIELD ROAD, FAIRFIELD, NJ 07004
PHONE: 973-882-2700 DEPT. EXT. 2506
FAX: 973-244-0178

EMERGENCY MANAGEMENT

Date: June 7, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject:Essex County All Hazard Mitigation Plan Update

Authorization and Letter of Intent to Participate

Municipality of Township of Fairfield

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Township of Fairfield, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Township of Fairfield:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: William Smith / Position/Department: OEM Coordinator, Emergency Management

Phone Number: 973-882-2740 Email Address: wsmith@fairfieldnj.org

Alternate/Secondary POC: Steve Bury Position/Department: Engineer, Engineering Dept.

Phone Number: 973-882-2700 ext. 2504 Email Address: sbury@fairfieldnj.org

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Phil Cheff Position/Department: Construction Official, Bldg. Dept.

Phone Number: 973-882-2700 ext. 2503 Email Address: pcheff@fairfieldnj.org

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,



William Smith
OEM Coordinator

Municipal Building
825 Bloomfield Avenue
P.O. Box 66
Glen Ridge, NJ 07028

Telephone
(973) 748-8400

Fax Number
(973) 748-3926

June 14, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Borough of Glen Ridge

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the Borough of Glen Ridge, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Borough of Glen Ridge:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas

    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Michael Rohal **Position/Department: Borough Administrator/Engineer/Clerk/QPA/Emergency Management Coordinator**

Phone Number: 973-748-0303 **Email Address: mjrohal@glenridgenj.org**

Alternate/Secondary POC: Michael Zichelli **Position/Department: Deputy Administrator/Director of Planning**

Phone Number: 973-748-8400, ext. 235 **Email Address: mpzichelli@glenridgenj.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA Michael Rohal **Position/Department: Borough Administrator/Engineer/Clerk/QPA/Emergency Management Coordinator**

Phone Number: 973-748-0303 **Email Address: mjrohal@glenridgenj.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Michael J. Rohal, P.E., R.M.C./P.P.
Borough Administrator/Engineer/Clerk/QPA/Emergency Management Coordinator

Date: June 18, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Township of Irvington

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Township of Irvington, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Township of Irvington:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: John F Brown **Position/Department: OEM Coordinator**

Phone Number: 973- 399- 6554 **Email Address: JBrown@Irvingtonnj.org**

Alternate/Secondary POC: Antonio Gary **Position/Department: Fire Chief/Deputy Coordinator**

Phone Number: 973-416-5677 **Email Address: AGary@irvingtonnj.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA John Wiggins **Position/Department: Engineer**

Phone Number: 973-399-6696 **Email Address: jwiggins@irvingtonnj.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

John F. Brown
OEM Coordinator

LIVINGSTON
NEW JERSEY
DEPARTMENT OF PUBLIC SAFETY

Fire Division

Fire Headquarters
62 S. Livingston Ave.
Livingston, NJ 07039

EMERGENCY: 911
Business: 973-992-2373
Fax: 973-535-2948
lfd@livingstonnj.org

Christopher C. Mullin
Fire Chief/Fire Official
Emergency Management Coordinator

Date: June 10, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality - Township of Livingston

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of the Township of Livingston, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of the Township of Livingston:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.
2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.

- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).

- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
- Structure and facility inventory data
- Identification of new development and anticipated development
- Identification of natural hazard risk areas
- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
- Providing notices of the planning project on our municipal website if available with links to a County project website
- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Christopher C. Mullin — **Fire Chief /Fire Official/O.E.M. Coordinator**
(973) 992-2373 — **Cmullin@livingstonnj.org**

Rossana Mattia — **Administrative Assistant to Fire Chief**
(973) 992-2373 — **Rmattia@livingstonnj.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Jeanette Harduby — **Township Engineer / Engineering Dept.**
(973 535-7949 — **Jharduby@livingstonnj.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,



Christopher C. Mullin

Fire Chief / Fire Official

Emergency Management Coordinator

BOROUGH OF NORTH CALDWELL
Borough Hall – 141 Gould Avenue
North Caldwell, New Jersey 07006-4213

Phone 973-228-6410 **Fax 973-228-2914**

Date: June 19, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Borough of North Caldwell.

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Borough of North Caldwell, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Borough of North Caldwell:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development

- Identification of natural hazard risk areas
- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Kevin O'Sullivan **Position/Department: Borough Administrator**

Phone Number: 973-228-6412 **Email Address: kosullivan@northcaldwell.org**

Alternate/Secondary POC: John D'Ascensio **Position/Department: OEM Coordinator**

Phone Number: 973-477-0051 **Email Address: jderif@gmail.com**

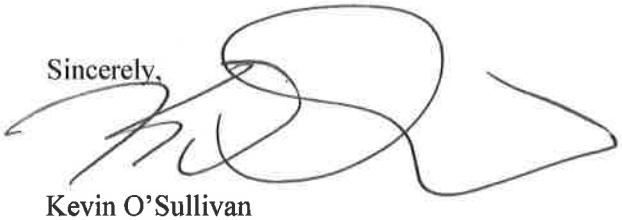
4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Paul Milani **Position/Department: Construction Official**

Phone Number: 973-228-6410 **Email Address: pmilani@northcaldwell.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,



Kevin O'Sullivan
Borough Administrator

Township of Maplewood

POLICE DEPARTMENT

1618 SPRINGFIELD AVENUE

MAPLEWOOD, NEW JERSEY 07040-2414

TELEPHONE: 973-762-3402

FAX 973-761-7850

JIM DEVAUL
CHIEF OF POLICE

June 13, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Maplewood

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Maplewood, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Maplewood:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development

    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Sonia A. Viveiros **Position/Department: Business Administrator/Admin**

Phone Number: 973-762-8120 X 2000 **Email Address: sviveiros@twp.maplewood.nj.us**

Alternate/Secondary POC: Jim DeVaul **Position/Department: Chief/Police**

Phone Number: 973-761-7901 **Email Address: jdevaul@twp.maplewood.nj.us**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Paul Kittner **Position/Department: Township Engineer/Engineering**

Phone Number: 973-762-8120 X3300 **Email Address: pkittner@twp.maplewood.nj.us**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,



Jim DeVaul
Chief of Police

JD/dg

Date: 6/14/19

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Millburn Township

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Millburn Township, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Millburn Township:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Captain Chris Beady
Phone Number: 973-564-7035
OEM Coordinator/Millburn Fire
Email Address: cbeady@millburntwp.org

Alternate/Secondary POC: Alex McDonald
Phone Number:973-564-7071
Deputy Coordinator/Business Administrator
Email Address: amcdonald@millburntwp.org

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Martha Callahan
Phone Number: 973-564-7052
Township Engineer
Email Address: mcallahan@millburntwp.org

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Chris Beady
OEM Coordinator

Township of Montclair

1 Pine Street, Montclair, New Jersey

Office: 973.509.5713
Cell: 201.247.9405

Rob Bianco
OEM Coordinator
rbianco@montclairnjusa.org

Date: June 13, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of the Township of Montclair

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of the Township of Montclair, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of the Township of Montclair:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.

- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Rob Bianco **Position/Department: EMC Department of Community Services**

Phone Number: 201-247-9405 **Email Address: rbianco@montclairnjusa.org**

Alternate/Secondary POC: John Herrmann **Position/Department: Fire Chief/DEMC**

Phone Number: 973-809-6302 **Email Address: jherrmann@montclairnjusa.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Norberto Hernandez **Position/Department: Township Engineer**

Phone Number: 973-356-5524 **Email Address: nhernandez@negliaengineering.com**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Rob Bianco

Rob Bianco
Emergency Management Coordinator

Date: June 6, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of City of Newark.

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of City of Newark, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of City of Newark:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Dorian Herrell **Position/Department: OEM Coordinator**

Phone Number: 973-877-9262 **Email Address: herrelld@ci.newark.nj.us**

Alternate/Secondary POC: Juba Dowdell **Position/Department: OEM Deputy Coordinator**

Phone Number: 973-877-9260 **Email Address: dowdellj@ci.newark.nj.us**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Phil Scott **Position/Department: Director/Engineering Dep.**

Phone Number: 973-733-8520 **Email Address: scottp@ci.newark.nj.us**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

SIGNATURE 

Dorian Herrell
Coordinator, Department of Public Safety,
OEM Division

Date: 06/10/19

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Nutley.

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Nutley, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Nutley:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Salvatore Ferraro **Position/Department: Engineering/ Department of Public Works**

Phone Number: 973-284-4958 **Email Address: sferraro@nutleynj.org**

Alternate/Secondary POC: William Cassidy **Position/Department: OEM Coordinator**

Phone Number: 973-590-9802 **Email Address:wcassidy@nutleynj.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA Salvatore Ferraro Position/Department Engineering/ Department of Public Works

Phone Number: 973-284-4958 **Email Address: sferraro@nutleynj.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

X William D Cassidy

William Cassidy
OEM Coordinator

Date: June 17, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of City of Orange, Township

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of City of Orange, Township is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of City of Orange, Township:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.

- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Raymond Wingfield, Assistant Director DPW/OEM Coordinator

Phone Number: (862) 250-3140 **Email Address: rwingfield@orangenj.gov**

Alternate/Secondary POC: Elvin Padilla Jr., Fire Captain/OEM Deputy Coordinator

Phone Number: (973) 747-9332 **Email Address: epadillajr@orangenj.gov**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Pamela Hilla, Remmington & Vernick Engineers

Phone Number: (732) 286-9220 **Email Address: pamela.jilla@rve.com**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely, Raymond Wingfield

BOROUGH of ROSELAND
Office of Emergency Management
Essex County, New Jersey 140 Eagle Rock Avenue Roseland NJ 07068
Coordinator John Matheis (Retired Roseland Police Captain)
Office 973-403-6840 E-mail jmatheis@roselandnj.org

Date: 06/13/19

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Roseland.

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of Borough of Roseland, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Borough of Roseland:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website

- Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
- Advertising and supporting public meetings in your area.
- Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Tom Jacobsen **Position/Department: Construction Offical**

Phone Number:973-403-6048 **Email Address:constofficial@roselandnj.org**

Alternate/Secondary POC:Gary Schall **Position/Department: Supt.DPW**

Phone Number:973-403-6049 **Email Address: gschall@roselandnj.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA Ralph Tango **Position/Department: Borough Engineer**

Phone Number:973-226 -6565 **Email Address: engineeroffical@roselandnj.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

ENTER NAME: John Matheis
ENTER TITLE: OEM Coordinator

Township of South Orange Village

Adam D. Loehner
Village Administrator

June 13, 2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of South Orange

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of South Orange, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of South Orange:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas

- Identification of natural hazard events and losses that have impacted your community in the last five years
- Identification of plans, studies, reports and ordinances addressing natural hazard risk
- Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Adam D. Loehner **Position/Department: Village Administrator**

Phone Number: 973-378-7715 x2 **Email Address: aloehner@southorange.orh**

Alternate/Secondary POC: Salvatore Renda **Position/Department: Village Engineer**

Phone Number: 973-378-7715 x3990 **Email Address: srenda@southorange.org**

Township of South Orange Village

Adam D. Loehner
Village Administrator

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Salvatore Renda **Position/Department: Village Engineer**

Phone Number: 973-378-7715 x3990 **Email Address: srenda@southorange.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Adam D. Loehner
Village Administrator
Township of South Orange Village

VERONA
Township of Verona, New Jersey

Municipal Building
600 Bloomfield Avenue
Verona, New Jersey 07044
Website: www.VeronaNJ.org

Telephone: (973) 239-3220

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of Verona

Dear Sheriff Fontoura:

June 10, 2019

Per your email dated June 6, 2019, the municipality of Verona, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of Verona:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
- Structure and facility inventory data
- Identification of new development and anticipated development
- Identification of natural hazard risk areas

VERONA

Township of Verona, New Jersey



• Identification of natural hazard events and losses that have impacted your community in the last five years
• Identification of plans, studies, reports and ordinances addressing natural hazard risk
• Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
• Support public outreach efforts in your community which may include:
• Providing notices of the planning project on our municipal website if available with links to a County project website
• Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
• Advertising and supporting public meetings in your area.
• Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
• Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
• Review draft Plan sections when requested and provide comment and input as appropriate.
• Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
• Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
• Involve your local NFIP Floodplain Administrator in the planning process.
• Adopt the Plan by resolution of their governing body after FEMA conditional approval.
• Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above are met.

VERONA

Township of Verona, New Jersey



Primary POC: Position/Department: OEM Coordinator Joel Martin/Police Department
Phone Number: 973-857-4819 Email Address: joel.martin@veronapolice.org

Alternate/Secondary POC: Position/Department: Deputy Coordinator Chris Kiernan/Police Chief
Phone Number: 973-857-4818 Email Address: christopher.kiernan@veronapolice.org

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:
Name of NFIP FPA Position/Department: Michael DeCarlo, Flood Plain Administrator
Phone Number: 973-857-8146 Email Address: mdecarlo@veronanj.org

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Joel Martin
Verona OEM Coordinator

Township of West Caldwell

Date: June 14,2019

Sheriff Armando B. Fontoura
Essex County Sheriff's Office
Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Municipality of West Caldwell

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the municipality of West Caldwell, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the municipality of West Caldwell:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).
- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:

  - Structure and facility inventory data
  - Identification of new development and anticipated development
  - Identification of natural hazard risk areas
  - Identification of natural hazard events and losses that have impacted your community in the last five years
  - Identification of plans, studies, reports and ordinances addressing natural hazard risk
  - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions

- Support public outreach efforts in your community which may include:
  - Providing notices of the planning project on our municipal website if available with links to a County project website
  - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in your area.
  - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community

- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.
- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

Township of West Caldwell

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Larry Peter	Emergency Management Coordinator
973-747-9946	Lpeter@westcaldwell.com
Secondary POC: John Medina	Deputy Emergency Management Coordinator
973-226-2300	Jmedina@westcaldwell.com

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Robert McLoughlin	Construction Official
973-226-2300	Rmcloughlin@westcaldwell.com

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Sincerely,

Larry Peter

Emergency Management Coordinator

30 Clinton Road, West Caldwell, New Jersey 07006-6704 • (973) 226-2300 • FAX: (973) 226-2396
www.westcaldwell.com

TOWNSHIP OF WEST ORANGE

415 VALLEY ROAD, WEST ORANGE, N.J. 07052

OFFICE OF EMERGENCY MANAGEMENT

ROBERT D. PARISI
Mayor

Deputy Fire Chief Daniel P. Shelley
OEM Coordinator

Tel: (973) 325-4175
Fax: (973) 669-1080
E-mail: wo-oem@westorange.org

June 18, 2019

Sheriff Armando Fontoura
County Emergency Management Coordinator
Essex County Office of Emergency Management
560 Northfield Avenue
West Orange, NJ 07052

Subject: Essex County All Hazard Mitigation Plan Update
Authorization and Letter of Intent to Participate
Township of West Orange

Dear Sheriff Fontoura:

Per your email dated June 6, 2019, the Township of West Orange, is committed to participating in the Essex County All Hazard Mitigation Plan (HMP) Update project. By way of this letter, the Township of West Orange:

1. Authorizes the Essex County HMP Update Steering Committee (aka "Steering Committee"), to guide and direct this planning process, perform certain parts of the planning process, and prepare certain parts of the plan documents on our behalf.

2. Agrees to meet the minimum requirements of jurisdictional participation (a.k.a. the Planning Partner Expectations), specifically:

- Execute and return this "Authorization and Acknowledgement" letter to the Essex County Office of Emergency Management, attention: Sheriff Armando Fontoura.
- Identify municipal representatives to serve as the planning point of contacts (POC), below. These people will be responsible for representing their community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings (Typically 4 meetings over 7 months, including a Kick-Off Meeting, Risk Assessment Meeting, a Jurisdictional Annex Workshop meeting and a Draft HMP meeting).

- Provide updates to data and information about your community as requested by the Essex County Office of Emergency Management, or the contract consultant, to update your jurisdictional annex including:
    - Structure and facility inventory data
    - Identification of new development and anticipated development
    - Identification of natural hazard risk areas
    - Identification of natural hazard events and losses that have impacted your community in the last five years
    - Identification of plans, studies, reports and ordinances addressing natural hazard risk
    - Identify mitigation activity in your community in the last five years, including progress on previously identified mitigation actions
- Support public outreach efforts in your community which may include:
    - Providing notices of the planning project on our municipal website if available with links to a County project website
    - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
    - Advertising and supporting public meetings in your area.
    - Supporting outreach to NFIP Repetitive Loss and Severe Repetitive Loss property owners in your community
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Prepare and submit a Jurisdictional Annex to the Steering Committee and/or the contract consultant. Templates and instructions to aid in the compilation of this information will be provided to all participating partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee. The Steering Committee will assure that technical and administrative resources are available to assist with the preparation and completion of the annexes including meeting with the contract consultant to facilitate the review and update.
- Identify specific mitigation actions to address each of the natural hazards posing high or medium risk to your community. These initiatives will be presented in your annex.
- Involve your local NFIP Floodplain Administrator in the planning process.

- Adopt the Plan by resolution of their governing body after FEMA conditional approval.
- Provide the Steering Committee with summary or municipal staff and volunteer labor spent on the planning process on a monthly basis.

3. Assigns the following persons to be the Points of Contact for our jurisdiction. We understand that these POCs are responsible for assuring municipal representation at Planning Committee meetings/calls and assuring that the other minimum requirements of jurisdictional participation, as detailed in the Planning Partner Expectations above, are met.

Primary POC: Deputy Fire Chief Daniel Shelley **Position/Department: OEM Coordinator**

Phone Number: 973.325.4175 **Email Address: wo-oem@westorange.org**

Alternate/Secondary POC: Dir. Leonard Lepore **Position/Department: Municipal Engineer**

Phone Number: 973.325.4160 **Email Address: llepore@westorange.org**

4. Our designated local Floodplain Administrator (FPA) under the National Flood Insurance Program (NFIP) is:

Name of NFIP FPA: Director Leonard Lepore **Position/Department: Municipal Engineer**

Phone Number: 973.325.4160 **Email Address: llepore@westorange.org**

5. Recognizes that failure to meet the minimum participation expectations and deadlines, as determined by the Steering Committee will result in our municipality being excluded from the planning process.

Yours truly

Deputy Fire Chief Daniel Shelley
OEM Coordinator

DS:mw

Cc: Mr. J.K. Sayers, Business Administrator
Director L. Lepore, Municipal Engineer

B.3 Hazard of Concern Review Exercise

At the July 2019 kickoff meeting, Steering Committee and municipal representatives were asked to contribute to the hazard identification exercise by reviewing the 2015 hazards of concern and indicating whether there has been a change in hazard event frequency, magnitude or severity over the last few years. In addition, the natural hazards that present the most risk were reported, as well as impacts due to small or nuisance events that need to be addressed. The following worksheets were submitted by meeting attendees. If a municipality was not present at the meeting or attended the meeting but did not submit a worksheet, their input was collected at individual local annex preparation meetings and reflected in their jurisdictional annex.

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: Newark

Name: Kenya Fraser

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☐ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☐ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☐ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☑ *Other:* Urban Flooding

Why do they present the most risk?

Long term impacts, repetitive flooding, damage to house, roads, critical infrastructure

Has this changed since the 2015 HMP?

Minimal progress

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: Flooding

Location: ~~City wide~~ City-wide

Impact: Economical
Housing
Roadways

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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Jurisdiction: North Caldwell
Name: Kevin O'Sullivan

For your consideration:

- Have additional hazards impacted the County since 2015?
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2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
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- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
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- ☐ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*

☑ *Other:* High groundwater impacting watercourses/drainage

Why do they present the most risk?

road closures, property damage, safety issues

Has this changed since the 2015 HMP?

increased intensity/frequency

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

thunderstorms/floods

Location:

multiple locations

Impact:

property damage

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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Jurisdiction: BELLEVILLE TOWNSHIP
Name: NICK BREINER & MARTY LUTZ

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☑ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
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- ☐ *Extreme Temperature (heat and cold)*
- ☑ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
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- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk? WE BORDER THE PASSAIC RIVER AND HAVE MANY LOW LYING AREAS. THESE AREAS FLOOD REGULARLY, EVEN WITH MODERATE RAINFALL.

Has this changed since the 2015 HMP? NO. RISK IS THE SAME.

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: FLOODING

Location: "THE VALLEY SECTION OF TOWN" = EASTERN BORDER OF OUR JURISDICTION ALONG THE PASSAIC RIVER, FROM NUTLEY TO NEWARK.

Impact:

IMPACTS VEHICULAR & PEDESTRIAN ACCESS TO VARIOUS STREETS & HOMES. REQUIRES FIRST RESPONDERS & DPW TO EXPEND RESOURCES, TIME AND MANPOWER.

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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Jurisdiction: Maplewood Twp
Name: Tim DeNail - Chief of Police

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
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- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*

☐ *Other:* _____

Why do they present the most risk?
WE HAVE SEVERAL LOCATIONS IN TOWN THAT FLOOD OFTEN
FLOODING PRESENTS SAFETY + TRANSPORTATION ISSUES + CONTRIBUTES TO PROPERTY DAMAGE.

Has this changed since the 2015 HMP? NO

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Location:

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

Hazards of Concern are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.

Jurisdiction: MONTCLAIR
Name: ROB BIANCO 201-247-9405

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
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Non-Natural Hazards	
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Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

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ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

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- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?

ONGOING problems.

Has this changed since the 2015 HMP?

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

DAM issues (flooding) (DEP)

Location:

VARIOUS LOCATIONS

Impact: Very Expensive To mitigate

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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Jurisdiction: Essex Fells
Name: John Schmank

For your consideration:

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ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*

☐ *Other:* _____

Why do they present the most risk?

Widespread power outages & road closures
Flooding & infrastructure damage

Has this changed since the 2015 HMP?

No

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Location:

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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Jurisdiction: Borough of Roseland
Name: Gary Schall Supt. DPW

For your consideration:

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Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
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Additional Hazards?	Economic Collapse

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- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☑ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☑ *Other:* Long Term Power Outages

Why do they present the most risk?

Flooding

Has this changed since the 2015 HMP? No

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Location:

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: City of East Orange

Name: Natasha Diaz & David Williams

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

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Natural Hazards	
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Non-Natural Hazards	
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Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
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- ☑ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?

Highly dense ~~area~~ community with a very vulnerable population.

Has this changed since the 2015 HMP?

Happens more frequently. Population increasing leads to more people at risk.

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

All the events described above lead to ~~many~~ numerous power outages constantly.

Location:

All over.

Impact:

Huge impact on elderly, low income, & special needs population. Overtime rises as well.

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

Hazards of Concern are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.

Jurisdiction: ROSELAND, NJ
Name: JOHN YAKIMIK / ENGINEER.

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
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Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

FEMA does not fund.

- PIPELINE EXPLOSION?
- URBAN FLOODING

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☒ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☒ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?

Has this changed since the 2015 HMP?

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Location:

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: Livingston Township
Name: Christopher C. Mullin

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☑ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☑ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☐ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?
Costal Storms and Flooding cause power outages and evacuations.
Heavy Snow / Winter Storms cause access related problems due to power lines / poles, down and unplowed streets.

Has this changed since the 2015 HMP?
Yes, increased response times from Utility Companies have reduced times of power outages.
Snow removal still a challange for municipality.

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Location:

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: South Orange

Name: Adam Loehner

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☒ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☐ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?

Because of storm water system is over 150 years old and built for a 50 year storm we are experiencing a greater amount of urban flooding.

Has this changed since the 2015 HMP?

Yes - infrastructure needs updating

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: urban flooding / Power outages by PSEG lack of updating lines because electric lines are in the backyards of homes

Location: throughout Village (most out of the flood area)

Impact: road closures & damage to homes

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

Hazards of Concern are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.

Jurisdiction: Irvington
Name: John Wissins / Tony Outerbridge

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☑ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☑ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk? Safety, Property Damage

Has this changed since the 2015 HMP? No

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: Flood (Urban), Severe Weather

Location: Throughout Township

Impact: Safety, Traffic, Business

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: ORANGE

Name: ELVIN PADILLA JR.

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☑ *Extreme Temperature (heat and cold)*
- ☐ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☑ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*

☐ *Other:* _____

Why do they present the most risk? Resources when handling the above natural hazards.

Has this changed since the 2015 HMP? No

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: Flooding (minor) during heavy rain fall.

Location: Valley section

Impact: Residential area, Road Closure

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction Name: MAPLEWOOD TOWNSHIP / PAUL J. KITTNER JR / TOWNSHIP ENGINEER

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☐ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☐ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☐ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☑ *Other:* EROSION OF STORMWATER FACILITIES / DRAINAGE WALLS + FEATURES DUE TO HIGHER INTENSITY STORM EVENTS. - FLOODING OF BASEMENTS - STAGNATED LAWNS + PROPERTIES

Why do they present the most risk?

EROSION OF HUMAN MADE STORMWATER FACILITIES

Has this changed since the 2015 HMP?

YES, STORMS + RAINFALL HAS BECOME MORE FREQUENT AND CARRY DURATION.

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?** YES

Type of hazard event:

HIGH INTENSITY SHORT DURATION RAINFALL EVENTS.

Location:

THROUGHOUT TOWNSHIP.

Impact:

DAMAGE to Property including MUNICIPAL-OWNED STRUCTURES.

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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Jurisdiction: City of Newark

Name: Dorian Herrill

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

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Economic

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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- ☐ *Coastal Erosion and Sea Level Rise*
- ☑ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☑ *Extreme Temperature (heat and cold)*
- ☑ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☑ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☑ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?

Flooding

Has this changed since the 2015 HMP?

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Flooding

Location: East Ward

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: Glen Ridge
Name: Michael Zichelli

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

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* — Water Infrastructure failures

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

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- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☐ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk?

Disruption to infrastructure (power, water, roadways)

Has this changed since the 2015 HMP?

Increase in frequency

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event:

Location:

Impact:

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: MILLBURN TWP.
Name: CHRIS BERRY – OEM Coordinator

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☐ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☐ *Extreme Temperature (heat and cold)*
- ☒ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☐ *Wildfire*
- ☐ *Other:* _____

Why do they present the most risk? Shuts down roads thru out the town. We have lots of hills making it difficult for First Responders to move around. Flooding in down town area has gotten better but is still a concern

Has this changed since the 2015 HMP?
Rebuilt dam at taylor park to help reduce flooding.

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: Severe weather causing trees and power lines to fall into roadway.

Location: all township roadways

Impact: Power outages, road closures, slower response times for fire, PD, EMS.

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: Caldwell

Name: Larry Peter

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

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ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☒ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☒ *Extreme Temperature (heat and cold)*
- ☒ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☒ *Wildfire* County Park Area
- ☒ *Other:* Stormwater flooding

Why do they present the most risk?

They have increased in frequency

Has this changed since the 2015 HMP?

Yes

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: Snow / Rain events

Location: Town wide

Impact: Traffic
Public Safety
Commerce

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

***Hazards of Concern** are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.*

Jurisdiction: West Caldwell

Name: Larry Peter

For your consideration:

- Have additional hazards impacted the County since 2015?
- Have hazards been mitigated and no longer cause impacts or put the County at risk?

2015 Essex HMP *	2020 Essex HMP * *(Indicate 'Keep' or detail requested changes)*
Natural Hazards	
Coastal Erosion and Sea-Level Rise	Keep
Coastal Storm (includes hurricane, tropical storm, nor'easter, storm surge)	Keep
Drought	Keep
Earthquakes	Keep
Extreme Temperature	Keep
Flood (riverine, dam failure)	Keep, expand discussion on urban flooding
Geological Hazard (landslide, subsidence/sinkholes, expansive soils)	Keep
Severe Weather (high winds, tornado, thunderstorm, hailstorms)	Keep
Severe Winter Weather (snow, blizzards, and ice storms)	Keep
Wildfire	Keep
Non-Natural Hazards	
Civil Disorder	Keep
Cyber Attack	Keep
Disease Outbreak (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus)	Keep
Hazardous Substances (Fixed Sites, In-Transit)	Keep
Power Outage	Keep
Terrorism	Keep
Transportation Failure (vehicular accidents, aviation accidents, railway failures and accidents, roadway and bridge failures)	Keep
Additional Hazards?	Economic Collapse

*Notes: *A climate change subsection was/will be included with every natural hazard chapter.*

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Hazards of Concern Review Exercise

1. **What are the <u>natural hazards</u> that present the most risk to your municipality or jurisdiction today?**

- ☐ *Coastal Erosion and Sea Level Rise*
- ☒ *Coastal Storm (hurricane, tropical storm, nor'easter, storm surge)*
- ☐ *Drought*
- ☐ *Earthquake*
- ☒ *Extreme Temperature (heat and cold)*
- ☒ *Flood (riverine, dam failure, urban)*
- ☐ *Geologic (landslide and subsidence/sinkhole/expansive soils)*
- ☒ *Severe Weather (high wind, tornado, thunderstorm, hailstorm)*
- ☒ *Severe Winter Storm (heavy snow, blizzard, ice storm)*
- ☒ *Wildfire* County Park areas
- ☒ *Other:* Stormwater Flooding

Why do they present the most risk?

They have increased in frequency

Has this changed since the 2015 HMP?

Yes

2. **Are there impacts occurring in your municipality or jurisdiction that happen often due to small natural hazard events, or considered a nuisance that need addressing?**

Type of hazard event: Snow / Rain events

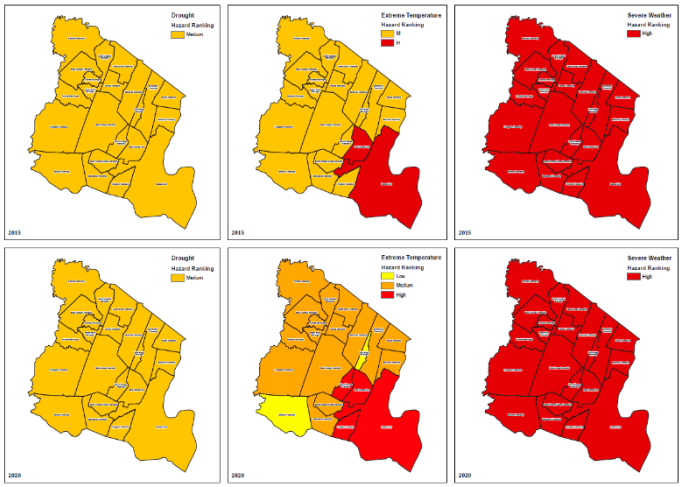
Location: Townwide

Impact: Traffic
Public Safety
Commerce ✓

B.4 Hazard Ranking Worksheets

At the September 2019 risk assessment meeting, Steering Committee and municipal representatives were asked to review their draft risk assessment results based on the calculated hazard ranking using an updated hazard ranking formula. Posters available at the meeting geographically displayed the 2015 hazard ranking results for each municipality compared to the draft 2020 hazard ranking, calculated solely using the updated risk assessment results (high = red, medium = orange, and yellow = low). The review and updates to the draft municipal-specific hazard ranking results were captured on worksheets which were distributed to the point of contact for each municipality. In addition, the municipal-specific adaptive capacity to hazard events was discussed as related to the individual municipalities and the County as a whole. The municipal-specific adaptive capacity was captured for each hazard of concern on the following worksheets as well. If a municipality was not present at the risk assessment meeting or it the municipality attended the meeting but did not submit a worksheet, their input was collected at individual local annex preparation meetings and reflected in their jurisdictional annex.

Exhibit B-1. Draft Hazard Ranking Poster



M

Borough of North Caldwell
Draft Hazard Ranking - *please hand in before you leave*

Name: John DAscearsro

Title and Agency: EMC OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		North Caldwell			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	N/A	N/A
Coastal Storm	Low	Low	Low	Low	N/A	N/A
Drought	Medium	Medium	Medium	Medium	Medium	medium
Earthquake	Medium	Medium	Low	Low	Low	Low
Extreme Temperature	Medium	Medium	Medium	Medium	Medium	Medium
Flood	Medium	Medium	Medium	Low	Medium	Medium
Geological Hazards	Low	Low	Low	Low	Medium	Medium
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	Medium	Medium
Civil Disorder	Medium	Medium	Low	Low	Low	medium
Cyber Attack	Medium	Medium	Low	Low	Low	Low
Disease Outbreak	High	Medium	Medium	Low	Low	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	medium	medium
Hazardous Substances	High	Medium	Medium	Low	Low	Low
Power Outages	High	High	Low	High	High	High
Terrorism	High	Low	Low	Low	~~Medium~~ High	High
Transportation Failure	High	Medium	Low	Low	Low	Medium

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Borough of Essex Fells
Draft Hazard Ranking - *please hand in before you leave*

Name: Jim Egan

Title and Agency: Director of OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Essex Fells			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	Low
Coastal Storm	Low	Low	Low	Low	Low	Low
Drought	Medium	Medium	Medium	Medium	Low	Low
Earthquake	Medium	Medium	Low	Low	Low	Low
Extreme Temperature	Medium	Medium	Medium	Medium	Medium	Medium
Flood	Medium	Medium	Medium	Low	Low	Low
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	Medium	Medium
Civil Disorder	Medium	Medium	Low	Low	Low	Low
Cyber Attack	Medium	Medium	Low	Low	Low	Low
Disease Outbreak	High	Medium	Medium	Low	Low	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Medium	Medium
Hazardous Substances	High	Medium	Medium	Low	Low	Low
Power Outages	High	High	Low	High	High	High
Terrorism	High	Low	Low	Low	~~Low~~ High	High
Transportation Failure	High	Medium	Low	Low	Low	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Fairfield
Draft Hazard Ranking - *please hand in before you leave*

Name: William Smith

Title and Agency: OEM Coordinator Fairfield OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

Rate 1

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Fairfield			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	L	Low
Coastal Storm	Low	Low	Low	Low	L	Low
Drought	Medium	Medium	Medium	Medium	M	Medium
Earthquake	Medium	Medium	High	High	L	Medium
Extreme Temperature	Medium	Medium	Medium	Medium	M	Medium
Flood	Medium	Medium	High	High	H	High
Geological Hazards	Low	Low	Low	Low	L	Low
Severe Storm	High	High	High	High	H	High
Winter Storm	High	High	High	High	H	High
Wildfire	Medium	Low	Medium	Low	M	Medium
Civil Disorder	Medium	Medium	Low	Low	L	Low
Cyber Attack	Medium	Medium	Low	Low	L	Medium
Disease Outbreak	High	Medium	Medium	Low	L	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	L	Medium
Hazardous Substances	High	Medium	Medium	Low	M	Medium
Power Outages	High	High	Low	High	H	High
Terrorism	High	Low	Low	Low	L	Low
Transportation Failure	High	Medium	Low	Low	L	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Belleville
Draft Hazard Ranking- *please hand in before you leave*

Name: Marty Lutz

Title and Agency: OEM Coordinator / Belleville

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Belleville			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Medium	Low	Med	Med
Coastal Storm	Low	Low	Medium	Medium	Med.	Med.
Drought	Medium	Medium	Medium	Medium	Med	Med.
Earthquake	Medium	Medium	Low	Low	Low	Low
Extreme Temperature	Medium	Medium	Medium	Medium	High	Med.
Flood	Medium	Medium	Medium	Low	High	Med.
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	Med.	Low
Civil Disorder	Medium	Medium	Low	Low	Med.	Low
Cyber Attack	Medium	Medium	Low	Low	Med.	Low
Disease Outbreak	High	Medium	Medium	Low	Med.	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Low	Med.
Hazardous Substances	High	Medium	Medium	Low	High	Med.
Power Outages	High	High	Low	High	High	Med.
Terrorism	High	Low	Low	Low	Med.	Low
Transportation Failure	High	Medium	Low	Low	Med.	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Nutley
Draft Hazard Ranking - *please hand in before you leave*

Name: Will Cassady / SALVATORE FERRARO

Title and Agency: OEM Crd / Eng Crd. Township of Nutley

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Nutley			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	3	Low
Coastal Storm	Low	Low	Medium	Medium	2	Medium
Drought	Medium	Medium	Medium	Medium	2	Medium
Earthquake	Medium	Medium	Low	Low	3	Low
Extreme Temperature	Medium	Medium	Medium	Medium	1	Medium
Flood	Medium	Medium	Medium	Low	2	Medium
Geological Hazards	Low	Low	Low	Low	3	Low
Severe Storm	High	High	High	High	2	High
Winter Storm	High	High	High	High	1	High
Wildfire	Medium	Low	Medium	Low	1	Low
Civil Disorder	Medium	Medium	Low	Low	1	Low
Cyber Attack	Medium	Medium	Low	Low	2	Low
Disease Outbreak	High	Medium	Medium	Low	3	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	3	Medium
Hazardous Substances	High	Medium	Medium	Low	1	Low
Power Outages	High	High	Low	High	2 *	High
Terrorism	High	Low	Low	Low	3	Low
Transportation Failure	High	Medium	Low	Low	3	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

* Based on Utility Companies

Essex County
Draft Hazard Ranking and Risk Assessment Review

Name: Ryan Peter

County Agency and Title: Essex County Sheriff

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide			
	2015	2020 Draft Update	Adaptive Capacity (capabilities)	County Feedback
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low
Coastal Storm	Low	Low	Medium	Low
Drought	Medium	Medium	Low	Med
Earthquake	Medium	Medium	Medium	Med
Extreme Temperature	Medium	Medium	High	Med
Flood	Medium	Medium	High	Med
Geological Hazards	Low	Low	High	Low
Severe Storm	High	High	High	High
Winter Storm	High	High	High	High
Wildfire	Medium	Low	Low	Medium
Civil Disorder	Medium	Medium	Medium	Med
Cyber Attack	Medium	Medium	Low	Med
Disease Outbreak	High	Medium	Medium	Med
Economic Collapse *(new)*	N/A	Medium	Low	Med
Hazardous Substances	High	Medium	High	Med
Power Outages	High	High	High	High
Terrorism	High	Low	Medium	High
Transportation Failure	High	Medium	Medium	Med

**Adaptive capacity assumed 'medium' for all hazards for the draft 2020 hazard ranking.*

Borough of Glen Ridge
Draft Hazard Ranking - *please hand in before you leave*

Name: Michael Rohal

Title and Agency: Administrator/Engineer - Glen Ridge

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Glen Ridge			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	N/A	Low
Coastal Storm	Low	Low	Low	Low	NA	Low
Drought	Medium	Medium	Medium	Medium	Medium	Medium
Earthquake	Medium	Medium	Low	Low	L	Low
Extreme Temperature	Medium	Medium	Medium	Low	M	Medium
Flood	Medium	Medium	Medium	Low	M	
Geological Hazards	Low	Low	Low	Low	M	Low
Severe Storm	High	High	High	High	H	H
Winter Storm	High	High	High	High	H	H
Wildfire	Medium	Low	Medium	Low	M	L
Civil Disorder	Medium	Medium	Low	Low	M	L
Cyber Attack	Medium	Medium	Low	Low	H	Med
Disease Outbreak	High	Medium	Medium	Low	M	L
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	M	L
Hazardous Substances	High	Medium	Medium	Low	M	L
Power Outages	High	High	Low	High	M	H
Terrorism	High	Low	Low	Low	M	L
Transportation Failure	High	Medium	Low	Low	M	L

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Maplewood
Draft Hazard Ranking - *please hand in before you leave*

Name: Tim DeVach

Title and Agency: Chief of Police – Maplewood

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Maplewood			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	Low
Coastal Storm	Low	Low	Low	Low	Low	Low
Drought	Medium	Medium	Medium	Medium	Medium	Medium
Earthquake	Medium	Medium	Low	Low	Low	Low
Extreme Temperature	Medium	Medium	Medium	Medium	Medium	Medium
Flood	Medium	Medium	Medium	Low	Medium	Medium
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	Low	Low
Civil Disorder	Medium	Medium	Low	Low	Low	Low
Cyber Attack	Medium	Medium	Low	Low	Low	Low
Disease Outbreak	High	Medium	Medium	Low	Low	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Medium	Medium
Hazardous Substances	High	Medium	Medium	Low	Low	Low
Power Outages	High	High	Low	High	High	High
Terrorism	High	Low	Low	Low	Low	Low
Transportation Failure	High	Medium	Low	Low	Low	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Borough of Roseland
Draft Hazard Ranking - *please hand in before you leave*

Name: JOHN MATHEIS / CHRIS CRITCHETT

Title and Agency: OEM COORDINATOR / SUPT. PUBLIC WORKS ROSELAND

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Roseland			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	LOW	LOW
Coastal Storm	Low	Low	Low	Low	LOW	LOW
Drought	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Earthquake	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Extreme Temperature	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Flood	Medium	Medium	Medium	Low	MEDIUM	LOW
Geological Hazards	Low	Low	Low	Low	LOW	LOW
Severe Storm	High	High	High	High	MEDIUM	HIGH
Winter Storm	High	High	High	High	MEDIUM	HIGH
Wildfire	Medium	Low	Medium	Low	LOW	LOW
Civil Disorder	Medium	Medium	Low	Low	LOW	LOW
Cyber Attack	Medium	Medium	Low	Low	LOW	MEDIUM
Disease Outbreak	High	Medium	Medium	Low	LOW	LOW
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	LOW	LOW
Hazardous Substances	High	Medium	Medium	Low	LOW	MEDIUM
Power Outages	High	High	Low	High	MEDIUM	HIGH
Terrorism	High	Low	Low	Low	LOW	LOW
Transportation Failure	High	Medium	Low	Low	LOW	LOW

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of South Orange Village
Draft Hazard Ranking - *please hand in before you leave*

Name: Adam Loehner

Title and Agency: South Orange Village

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		South Orange			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	Low
Coastal Storm	Low	Low	Low	Low	Low	Low
Drought	Medium	Medium	Medium	Medium	Medium	Medium
Earthquake	Medium	Medium	Low	Low	Low	Low
Extreme Temperature	Medium	Medium	Medium	Medium	Medium	Medium
Flood	Medium	Medium	Medium	Low	Medium	Medium
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	Medium	Medium
Civil Disorder	Medium	Medium	Low	Low	Medium	Medium
Cyber Attack	Medium	Medium	Low	Low	Medium	Medium
Disease Outbreak	High	Medium	Medium	Low	~~Low~~ Medium	Medium
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Medium	Medium
Hazardous Substances	High	Medium	Medium	Low	Low	Low
Power Outages	High	High	Low	High	High	High
Terrorism	High	Low	Low	Low	~~Medium~~ High	High
Transportation Failure	High	Medium	Low	Low	Medium	Medium

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Millburn
Draft Hazard Ranking - *please hand in before you leave*

Name: CHRIS BEADY

Title and Agency: OEM Coordinator / MILLBURN PD

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Millburn			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	Low
Coastal Storm	Low	Low	Low	Low	Low	Low
Drought	Medium	Medium	Medium	Medium	Med	Med
Earthquake	Medium	Medium	Medium	Medium	Med	Med
Extreme Temperature	Medium	Medium	Medium	Low	Low	Low
Flood	Medium	Medium	Medium	Low	Low	Med
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	~~Low~~ M	Medium	Low	Low	Med
Civil Disorder	Medium	Medium	Low	Low	Low	Low
Cyber Attack	Medium	Medium	Low	Low	Low	Low
Disease Outbreak	High	Medium	Medium	Low	Low	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Med	Med.
Hazardous Substances	High	Medium	Medium	Low	Low	Low
Power Outages	High	High	Low	High	High	High
Terrorism	High	~~Low~~ H	Low	Low	Low	Low
Transportation Failure	High	Medium	Low	Low	Low	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of West Orange
Draft Hazard Ranking - *please hand in before you leave*

Name: DAN SHELLEY

Title and Agency: WEST ORANGE FIRE / OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		West Orange			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	MEDIUM	LOW
Coastal Storm	Low	Low	Low	Low	MEDIUM	LOW
Drought	Medium	Medium	Medium	Medium	LOW	MEDIUM
Earthquake	Medium	Medium	Low	Low	MEDIUM	LOW
Extreme Temperature	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Flood	Medium	Medium	Medium	Low	MEDIUM	LOW
Geological Hazards	Low	Low	Low	Low	LOW	LOW
Severe Storm	High	High	High	High	MEDIUM	HIGH
Winter Storm	High	High	High	High	MEDIUM	HIGH
Wildfire	Medium	Low	Medium	Low	LOW	HIGH
Civil Disorder	Medium	Medium	Low	Low	LOW	LOW
Cyber Attack	Medium	Medium	Low	Low	LOW	LOW
Disease Outbreak	High	Medium	Medium	Low	MEDIUM	MEDIUM
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	LOW	MEDIUM
Hazardous Substances	High	Medium	Medium	Low	LOW	MEDIUM
Power Outages	High	High	Low	High	MEDIUM	HIGH
Terrorism	High	Low	Low	Low	LOW	MEDIUM
Transportation Failure	High	Medium	Low	Low	MEDIUM	HIGH

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

C

Risk Assessment Meeting
September 19, 2019

City of Orange Township
Draft Hazard Ranking - *please hand in before you leave*

Name: ELVIN PADILLA JR.

Title and Agency: DEPUTY CHIEF / DEPUTY COORD. FIRE/OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Orange			
				2020		
	2015	2020 Draft Update	2015	Based on Risk Assessment Results	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	LOW	LOW
Coastal Storm	Low	Low	Low	Low	LOW	LOW
Drought	Medium	Medium	Medium	Medium	MED.	MED.
Earthquake	Medium	Medium	Low	Low	LOW	LOW
Extreme Temperature	Medium	Medium	Medium	High	HIGH	HIGH
Flood	Medium	Medium	Medium	Low	LOW	LOW
Geological Hazards	Low	Low	Low	Low	LOW	LOW
Severe Storm	High	High	High	High	HIGH	HIGH
Winter Storm	High	High	High	High	HIGH	HIGH
Wildfire	Medium	Low	Medium	Low	HIGH	HIGH
Civil Disorder	Medium	Medium	Low	Low	MED.	MED
Cyber Attack	Medium	Medium	Low	Low	LOW	MED
Disease Outbreak	High	Medium	Medium	Low	LOW	LOW
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	MED.	MED.
Hazardous Substances	High	Medium	Medium	Low	LOW	LOW
Power Outages	High	High	Low	High	HIGH	HIGH
Terrorism	High	Low	Low	Low	MED.	MED.
Transportation Failure	High	Medium	Low	Low	LOW	LOW

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

City of East Orange
Draft Hazard Ranking - *please hand in before you leave*

Name: R David Williams

Title and Agency: East Orange OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		East Orange			
	2015	2020 Draft Update	2015	2020 Based on Risk Assessment Results	2020 Adaptive Capacity (Capabilities)	2020 Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	low	low
Coastal Storm	Low	Low	Low	Low	low	low
Drought	Medium	Medium	Medium	Medium	low	med
Earthquake	Medium	Medium	Low	Low	low	low
Extreme Temperature	Medium	Medium	High	High	low	high
Flood	Medium	Medium	Medium	Low *	low	high
Geological Hazards	Low	Low	Low	Low	low	low
Severe Storm	High	High	High	High	medium	High
Winter Storm	High	High	High	High	medium	High
Wildfire *	Medium	Low	Medium	Low	low	low
Civil Disorder	Medium	Medium	Low	Low	low	low
Cyber Attack	Medium	Medium	Low	Low *	low	high
Disease Outbreak	High	Medium	Medium	Low	medium	low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	low	medium
Hazardous Substances	High	Medium	Medium	Low	medium	low
Power Outages	High	High	Low	High	low	high
Terrorism	High	Low	Low	Low *	medium	~~med~~ high
Transportation Failure	High	Medium	Low	Low *	low	high

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

City of East Orange
Draft Hazard Ranking - *please hand in before you leave*

Name: Natasha Ortiz

Title and Agency: EO City Assistant – East Orange

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		East Orange			
				2020		
	2015	2020 Draft Update	2015	Based on Risk Assessment Results	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	low	low
Coastal Storm	Low	Low	Low	Low	low	low
Drought	Medium	Medium	Medium	Medium	low	med.
Earthquake	Medium	Medium	Low	Low	low	low
Extreme Temperature	Medium	Medium	High	High	~~High~~ med.	high
Flood	Medium	Medium	Medium	Low	med.	~~med.~~ med
Geological Hazards	Low	Low	Low	Low	low.	low
Severe Storm	High	High	High	High	med.	high
Winter Storm	High	High	High	High	med.	high
Wildfire	Medium	Low	Medium	Low	low.	low
Civil Disorder	Medium	Medium	Low	Low	low	low
Cyber Attack	Medium	Medium	Low	Low	med.	med.
Disease Outbreak	High	Medium	Medium	Low	low	med.
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	med.	med.
Hazardous Substances	High	Medium	Medium	Low	low	low
Power Outages	High	High	Low	High	low ~~med~~ med.	high
Terrorism	High	Low	Low	Low	low	high
Transportation Failure	High	Medium	Low	Low	~~med~~ low	high

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Irvington
Draft Hazard Ranking - *please hand in before you leave*

Name: J. Brown, J. Wiggins, T. Outerbridge

Title and Agency: Irvington

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Irvington			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	18
Coastal Storm	Low	Low	Low	Low	Low	17
Drought	Medium	Medium	Medium	Medium	Med	10
Earthquake	Medium	Medium	Low	Low	Low	16
Extreme Temperature	Medium	Medium	Medium	High	Med	11
Flood	Medium	Medium	Medium	Low	Med	3
Geological Hazards	Low	Low	Low	Low	Low	15
Severe Storm	High	High	High	High	High	1
Winter Storm	High	High	High	High	High	2
Wildfire	Medium	Low	Medium	Low	Med	5
Civil Disorder	Medium	Medium	Low	Low	Low	14
Cyber Attack	Medium	Medium	Low	Low	Low	13
Disease Outbreak	High	Medium	Medium	Low	Med	9
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Med	12
Hazardous Substances	High	Medium	Medium	Low	Med	6
Power Outages	High	High	Low	High	High	4
Terrorism	High	Low	Low	Low	Med	7
Transportation Failure	High	Medium	Low	Low	Med	8

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

City of Newark
Draft Hazard Ranking - *please hand in before you leave*

Name: Tanya Fraser

Title and Agency: City of Newark - OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Newark			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Medium	Low	Low	Low
Coastal Storm	Low	Low	Medium	High	High	Medium
Drought	Medium	Medium	Medium	Medium	Medium	Medium
Earthquake	Medium	Medium	High	Medium	Medium	Medium
Extreme Temperature	Medium	Medium	High	High	High	High
Flood	Medium	Medium	High	Medium	Medium	Medium
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	Low	Low
Civil Disorder	Medium	Medium	Low	Low	Medium	Medium
Cyber Attack	Medium	Medium	Low	Low	Low	Low
Disease Outbreak	High	Medium	Medium	Low	Medium	Medium
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Medium	Medium
Hazardous Substances	High	Medium	Medium	Low	Medium	Medium
Power Outages	High	High	Low	High	High	High
Terrorism	High	Low	Low	Low	Medium	Medium
Transportation Failure *Infrastructure	High	Medium	Low	Low	Low	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Verona
Draft Hazard Ranking - *please hand in before you leave*

Name: Joel Martin

Title and Agency: OEM Coordinator – Verona

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Verona			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	Low
Coastal Storm	Low	Low	Low	Low	Low	Low
Drought	Medium	Medium	Medium	Medium	Low	Low
Earthquake	Medium	Medium	Medium	Medium	Low	Low
Extreme Temperature	Medium	Medium	Medium	Medium	Low	Low
Flood	Medium	Medium	Medium	Low	Med	Med
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	~~Low~~ Med	Med
Civil Disorder	Medium	Medium	Low	Low	Low	Low
Cyber Attack	Medium	Medium	Low	Low	Low	Low
Disease Outbreak	High	Medium	Medium	Low	Low	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Med	Med
Hazardous Substances	High	Medium	Medium	Low	Low	Med
Power Outages	High	High	Low	High	High	High
Terrorism	High	Low	Low	Low	~~Med~~ High	Med
Transportation Failure	High	Medium	Low	Low	Low	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of West Caldwell
Draft Hazard Ranking - *please hand in before you leave*

Name: Larry Peter

Title and Agency: West Caldwell OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		West Caldwell			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Low	Low
Coastal Storm	Low	Low	Low	Low	med	Low
Drought	Medium	Medium	Medium	Medium	~~High~~ med	med
Earthquake	Medium	Medium	High	High	med	med
Extreme Temperature	Medium	Medium	Medium	Medium	med	med
Flood	Medium	Medium	Medium	Low	med	med
Geological Hazards	Low	Low	Low	Low	med	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	~~med~~ Low	med
Civil Disorder	Medium	Medium	Low	Low	med	Low
Cyber Attack	Medium	Medium	Low	Low	med	med
Disease Outbreak	High	Medium	Medium	Low	High	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	med	Low
Hazardous Substances	High	Medium	Medium	Low	med	med
Power Outages	High	High	Low	High	med	High
Terrorism	High	Low	Low	Low	med	Low
Transportation Failure	High	Medium	Low	Low	med	med

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Cedar Grove
Draft Hazard Ranking - *please hand in before you leave*

Name: Jeffrey McElroy

Title and Agency: OEM CEDAR GROVE

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Cedar Grove			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	LOW	LOW
Coastal Storm	Low	Low	Low	Low	LOW	LOW
Drought	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Earthquake	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Extreme Temperature	Medium	Medium	Medium	Medium	MEDIUM	MEDIUM
Flood	Medium	Medium	Medium	Low	LOW	MEDIUM
Geological Hazards	Low	Low	Low	Low	LOW	LOW
Severe Storm	High	High	High	High	HIGH	HIGH
Winter Storm	High	High	High	High	HIGH	HIGH
Wildfire	Medium	Low	Medium	Low	MEDIUM	MEDIUM
Civil Disorder	Medium	Medium	Low	Low	LOW	LOW
Cyber Attack	Medium	Medium	Low	Low	LOW	LOW
Disease Outbreak	High	Medium	Medium	Low	LOW	LOW
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	MEDIUM	MEDIUM
Hazardous Substances	High	Medium	Medium	Low	LOW	LOW
Power Outages	High	High	Low	High	LOW	HIGH
Terrorism	High	Low	Low	Low	LOW	LOW
Transportation Failure	High	Medium	Low	Low	LOW	LOW

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Borough of Caldwell
Draft Hazard Ranking - *please hand in before you leave*

Name: Brian Maclay

Title and Agency: Caldwell OEM

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Caldwell			
				2020		
	2015	2020 Draft Update	2015	*Draft - Based on Risk Assessment Results	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	Medium	Low
Coastal Storm	Low	Low	Low	Low	Medium	Low
Drought	Medium	Medium	Medium	Medium	Medium	Medium
Earthquake	Medium	Medium	High	High	Medium	High
Extreme Temperature	Medium	Medium	Medium	Medium	Medium	Medium
Flood	Medium	Medium	Medium	Low	Medium	High
Geological Hazards	Low	Low	Low	Low	Medium	Low
Severe Storm	High	High	High	High	Medium	High
Winter Storm	High	High	High	High	Medium	High
Wildfire	Medium	Low	Medium	Low	Medium	Medium
Civil Disorder	Medium	Medium	Low	Low	Medium	Low
Cyber Attack	Medium	Medium	Low	Low	Medium	Medium
Disease Outbreak	High	Medium	Medium	Low	Medium	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	Medium	Medium
Hazardous Substances	High	Medium	Medium	Low	Medium	Low
Power Outages	High	High	Low	High	Medium	~~High~~ Medium
Terrorism	High	Low	Low	Low	Medium	Medium
Transportation Failure	High	Medium	Low	Low	Medium	Low

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

Township of Montclair
Draft Hazard Ranking - *please hand in before you leave*

Name: John Herrmann

Title and Agency: Fire Chief Montclair Fire Dept.

Hazard Ranking Equation =
Probability of Occurrence x 30% + [Impact (Population + Property + Economy) x 30%]
+ Adaptive Capacity x 30% + Climate Change x 10%

2015 and Draft 2020 Hazard Rankings

Hazard	Countywide		Montclair			
				2020		
	2015	2020 Draft Update	2015	Draft - Based on Risk Assessment Results*	Adaptive Capacity (Capabilities)	Municipal Ranking
Coastal Erosion and Sea Level Rise	Low	Low	Low	Low	N/A	N/A
Coastal Storm	Low	Low	Low	Low	N/A	N/A
Drought	Medium	Medium	Medium	Medium	Medium	Medium
Earthquake	Medium	Medium	Low	Low	Medium	Low
Extreme Temperature	Medium	Medium	Medium	Medium	Medium	Medium
Flood	Medium	Medium	Medium	Low	High	Medium
Geological Hazards	Low	Low	Low	Low	Low	Low
Severe Storm	High	High	High	High	High	High
Winter Storm	High	High	High	High	High	High
Wildfire	Medium	Low	Medium	Low	medium	medium
Civil Disorder	Medium	Medium	Low	Low	medium	Low
Cyber Attack	Medium	Medium	Low	Low	medium	medium
Disease Outbreak	High	Medium	Medium	Low	medium	Low
Economic Collapse *(new)*	N/A	Medium	N/A	Medium	medium	Low
Hazardous Substances	High	Medium	Medium	Low	High	Low
Power Outages	High	High	Low	High	medium	High
Terrorism	High	Low	Low	Low	medium	medium
Transportation Failure	High	Medium	Low	Low	medium	medium

*Note: *Adaptive capacity was assumed Medium for all hazards to calculate the draft hazard ranking*

B.5 SWOO Exercise Worksheets

At the September 2019 risk assessment meeting, Steering Committee and municipal representatives were asked to participate in a Strengths, Weaknesses, Obstacles and Opportunities (SWOO) exercise focusing on the high ranked hazards. Together, all attendees were invited to participate in the exercise conducted for the County focusing on flood, severe weather/coastal storm and extreme temperature. Next, meeting participants were asked to record their input on strengths, weaknesses, obstacles and opportunities for their community's high-ranked hazards. The following worksheets were submitted by meeting attendees capturing their SWOO for their community. If a municipality was not present at the risk assessment meeting or attended the meeting but did not submit a worksheet, their input was collected at individual local annex preparation meetings and reflected in their jurisdictional annex.

C

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Tanya Fraser

Department/Agency: OEM

Municipality: Newark

Email: fraserta@ci.newark.nj.us

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard: ~~Extreme~~ Temperature Flood	
S (Strength)	• Designated flood hazard areas • Knowledge of vulnerable areas •
W (Weakness)	• Frequent flooding events during flash flooding
Ob (Obstacle)	catch basin maintenance
Opps	• Accessing grant funding from HMGP funds to adopted plans

Hazard: Severe Storm	
S	• Generators for critical facilities • MOU w/ PSEG • EOC activation / partner collaborations
W	• Underground or above ground infrastructure
Ob	~~• Deployment of resources~~ • A
Opps	• Funding for resources enhancement

Hazard: Extreme Temperatures	
S	• ~~weather monitoring increasing~~ heavy cooling/warming ~~ATMs~~ • Facilities w/ back-up generators • Heat/Cold Plans in place, updated annually
W	• Sheltering resources limited supplies (Homeless - cold temp)
Ob	• Manpower
Opps	• Engage community residents, education, public outreach

Hazard: Power Outages	
S	• Back-up generators • Ready available resources (generators)
W	Homeless population
Ob	• Sufficient resource to house/shelter Homeless population
Opps	• Grant funding for sheltering of Homeless population

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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: ELVIN PADILLA JR.

Department/Agency: FIRE / OEM

Municipality: ORANGE

Email: epadillajr@orangenj.gov

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	EXTREME TEMPERATURE
S	Preparedness, keeping key individuals informed
W	Notifying entire community of resources Homeless
Ob	Finance, access to regular cooling stations
Opps	Grants, outreach from County and surrounding Communities

Hazard:	WINTER STORM
S	Preparedness, Interdepartmental Coordination
W	Manpower and equipment Dealing with Homeless Documentation
Ob	Transportation, Shelter
Opps	Funding, emergency appropriation

Hazard:	SEVERE STORM
S	Preparedness, keeping key individuals informed
W	Communicating with citizens
Ob	Outreach
Opps	Grants, Social media

Hazard:	POWER OUTAGES
S	Coordinating, planning
W	Ability to assist citizens during large scale outages
Ob	Restoring service
Opps	Portable generators

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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: J. Wiggins, Tony Outerbridge

Department/Agency: Engineering, Fire

Municipality: Irvington

Email: JWiggins@IrvingtonNJ.org, Touterbridge@Irvington NJ.org

Please identify the hazard of concern and list any Strengths, Weaknesses, Obstacles, or Opportunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe storm (1)
S	Some systems in place to react hazard
W	Not all system address all needs
Ob	Finance and ability to fund initiatives
Opps	Grant funding

Hazard:	Flood (3)
S	Roffed system is in good to fair condition
W	There are parts of obstacles within the system that are different and expensive to fix
Ob	Funding
Opps	Some opportunity to address system grant funding

Hazard:	Winter storm (2)
S	Fully staffed DPW to address storm
W	Some equipment is aged department is small
Ob	Funding and ability to buy new equipment and hire new personnel
Opps	Capital budget funding however it is limited

Hazard:	Power Outages (4)
S	Some improvements completed with the installation of emergency generators
W	Not all buildings yet need emergency generators have been
Ob	Funding
Opps	Some FEMA available as grant funding but limited

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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: R. David Williams

Department/Agency: OEM

Municipality: City of East Orange

Email: david.williams@eastorange-NJ.gov

Please identify the hazard of concern and list any **S**trengths, **W**eaknesses, **Ob**stacles, or **Opp**ortunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe Storm - Flooding
S	Active cert team.
W	Limited personel Limited pumps & generators
Ob	mobile and vonurable community
Opps	need additional funding for outreach

Hazard:	Winter Storm
S	Large inventory of snow removal equip
W	Limited personel and salt supply
Ob	Limited funding
Opps	additional equipment

Hazard:	Power Outages
S	Communications has emergency power.
W	Vonurable community Limited number of Fixed generators in facilities. Limited ~~Response~~ capacity
Ob	many older facilities
Opps	need additional generators

Hazard:	Terrorism
S	Decon task force (FIRE) Rapid Deployment team in place (FIRE)
W	Limited number of trained personnel ~~Limit~~ Inadequate equipment.
Ob	densly populated community
Opps	additional funding

(over)

Essex County
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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Please identify the hazard of concern and list any **S**trengths, **W**eaknesses, **Ob**stacles, or **Opp**ortunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	
S	
W	
Ob	
Opps	

Hazard:	
S	
W	
Ob	
Opps	

Hazard:	
S	
W	
Ob	
Opps	

Hazard:	
S	
W	
Ob	
Opps	

Water pumping station does not have emergency generator and is in area prone to power failures

Police Pistol range is in flood prone area and has suffered repeated loss

Need water tender/Tanker to supply water during emergency

Essex County
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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Jose B. Torres
Department/Agency: Essex County Sheriffs Office
Municipality:
Email: Jtorres@essexsheiff.com

Please identify the hazard of concern and list any Strengths, Weaknesses, Obstacles, or Opportunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Terrorism
S	K9 units trained to detect bombs and hazerdous materials that can be used in an attack.
W	Unable to predict when an attack will take place.
Ob	Not enough training currently being completed for this type of Hazard.
Opps	Identify high risk locations that can be a possible vunerable location for an attack

Hazard:	Power Outages
S	Good relationship with power company.
W	Densley populated areas are affected heavily.
Ob	Unable to determine a time frame as to when a specific location will lose power.
Opps	Add generators to critical infrastructures.

Hazard:	Severe Storm
S	Mapped floodplains Manpower + resources
W	Unable to ascertain locations where large trees or phone poles will fall down as a result of the Storm.
Ob	Several municipalites are hit all at once during a storm which makes getting resources to them in a timely manner difficult.
Opps	Barricade off areas that are commonly affected by a severe storm prior to the Storm hitting.

Hazard:	Winter Storm
S	Manpower + resources Experience with winter storms
W	Aging equipment. Steep hills.
Ob	The public not complying with no parking ordinances for plows to get through.
Opps	Use social media to alert the members of the community to obey all parking ordinances during a storm.

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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Michael J. Rahaj
Department/Agency: Administration/Engineering
Municipality: Glen Ridge
Email: MJRahaj@glenridgenj.org

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe Storm
S	Staff & Equipment ~~Tree~~ Forestry Plan Advance Planning
W	Limited staff for prolonged events
Ob	Funding
Opps	Shared Services

Alert System
Private Contracts in Place

Hazard:	Power Outages
S	~~DPW Portable~~ Installed generators @ critical facilities
W	Aged Infrastructure
Ob	Funding Rear Yard Service
Opps	Upgrade circuits

Hazard:	Winter Storm
S	Alert System - State & Equipment Advance Planning
W	Limited staff for prolonged events
Ob	Funding
Opps	Shared Services

Hazard:	
S	
W	
Ob	
Opps	

Essex County
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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Marty Lutz

Department/Agency: OEM / Fire

Municipality: Belleville

Email: MLutz@BellevilleFireDept.org.

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe STORM
S	Shelters / Generators. Previous Experience.
W	Manpower. multiple Calls / Priority Basis
Ob	mutual Aid UNAVAILIBLE
Opps	Pre-plans.

Hazard:	WINTER STORM
S	Resources Avail / Equip. Salt Dome
W	Road Closures. Disabled Vehicles
Ob	mutual Aid UNAVAILIBLE
Opps	pre-plan Previous Experience

Hazard:	Flood
S	Several Small Boats Previous Flood Experience Known Areas. E.O.P.
W	NOT Enough Manpower TO Respond To multiple Calls
Ob	Communication / Priority Funding.
Opps	Mutual Aid.

Hazard:	
S	
W	
Ob	
Opps	

Essex County
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Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Will Cassady / Salvatore Ferraro

Department/Agency: Public Safety / DPW

Municipality: Nutley

Email: sferraro@nutleynj.org / wcassidy@nutleynj.org

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe Storm
S	- Equipment / Manpower DPW / Parks Dept / Public Safety - Dedicated shelters - Backup Generators
W	- Limited debris location - Limited Budgets
Ob	- Budget / Costs - space
Opps	- community outreach - Education - Acquire new Equipment

Hazard:	Winter Storm
S	- Equipment / Manpower DPW / Parks Dept. / Public Safety - Dedicated shelters - Backup Generators
W	- Limited location for storage of snow / Debris - Costs / Expenses
Ob	- Budgets / Costs - space
Opps	- Acquire new Equipment Technology - community outreach / Education

Hazard:	Power outages
S	- Backup Generators for public buildings - Equipment / Manpower
W	- Township cannot correct power outage w/o Utility companies PSE&G - communication w/ power
Ob	- PSE&G / Utility Companies ~~delay~~ response time
Opps	- public outreach / Education - communication w/ utility companies

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: CHRIS BEADY

Department/Agency: MCC BCRU OEM

Municipality: MCC BCRU

Email: CBeady@MCCBCRU TWP.ORG

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Power OUTAGE
S	MAN POWER OF first dive Responders to SAFELY SCORE AREA Generators
W	INFRASTRUCTURE OF POWER POLES tree trimming
Ob	Outside Agencies MAINTAINING EQUIPMENT
Opps	better Communication with Power Company Generator Grants

Hazard:	Severe Storm
S	STAFFING for Storms, EQUIPMENT OEM STAFFING/MEETINGS
W	Communication during Storm, time table of Storm event
Ob	media Coverage CAUSING over reaction
Opps	SOCIAL media - proper information given.

Hazard:	WINTER Storm
S	additional STAFFING, meals. rotation of MAN POWER during event
W	response time -
Ob	POWER LINES down trees down - closing ROAD WAYS
Opps	SOCIAL media - more EQUIPMENT

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: DAN SHELLEY

Department/Agency: WOFD/OEM

Municipality: WEST ORANGE

Email: DSHELLEY@WESTORANGE.ORG

Please identify the hazard of concern and list any Strengths, Weaknesses, Obstacles, or Opportunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	TRANSPORTATION / RT 280
S	CAREER POLICE, FIRE, EMS
W	STATE MAINTAINED
Ob	ROAD CLOSURES DUE TO WEATHER, ACCIDENT OR HAZMAT WILL IMPACT THE TOWN + COUNTY ROADS
Opps	

Hazard:	POWER OUTAGES / STORM
S	EXPERIENCE DEALING WITH OUTAGES
W	WHEN WIDESPREAD NEED MANPOWER
Ob	POWER COMPANY RESOURCES
Opps	COMMUNICATIONS BETWEEN POWER COMPANY

Hazard:	WILDFIRE
S	CAREER FIRE + COUNTY POLICE
W	ACCESS TO THE FIRE ON COUNTY PROPERTY
Ob	EQUIPTMENT + MANPOWER
Opps	RECEIVE TRAINING + EQUIPTMENT

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Tim DeVaul
Department/Agency: Maplewood Police
Municipality: Maplewood Twp
Email: TDeVaul@Twp.Maplewood.NJ.US

Please identify the hazard of concern and list any Strengths, Weaknesses, Obstacles, or Opportunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Flood
S	Planning Board Review Building Requirements
W	Man-power Problem Areas. Lack of Training
Ob	Funds, Lack of Equipment.
Opps	Suggest & identify Problem & Solutions. Apply for Grant Funding.

Hazard:	Power outages
S	Tree trimming Generators. Mutual Aid.
W	Above Ground wires & poles & lighting. Lack of training.
Ob	Communication
Opps	Participate in Joint functions.

Hazard:	winter Storm
S	Small Town, not many problems. Staffing & Equipment.
W	Communication Resources, Emergency Power
Ob	People ignoring warnings.
Opps	Mutual Aid.

Hazard:	Extreme temps
S	Identify Safe Locations In the Twp
W	Communications
Ob	How to reach out to At risk communities.
Opps	Advance Trainings + Communication.

K

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Larry Peter

Department/Agency: OEM

Municipality: West Caldwell

Email: Lpeter@westcaldwell.com

Please identify the hazard of concern and list any **S**trengths, **W**eaknesses, **Ob**stacles, or **Opp**ortunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe Storm
S	manpower, equipment
W	the need to meet more frequent events
Ob	budget constraints
Opps	debris management plan needed

Hazard:	Winter storms
S	manpower, equipment
W	the need to meet more frequent events
Ob	budget constraints
Opps	debris management plan needed

Hazard:	Power outages
S	Additional generators have been added
W	the need to meet more frequent events
Ob	budget constraints
Opps	Additional Generators

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: John Herrmann

Department/Agency: Montclair Fire Department

Municipality: Montclair

Email: jherrmann@montclairnjusa.org

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Severe Storm
S	Staffing + Equipment contracts
W	Depends on Duration
Ob	staff time management
Opps	shared services

Hazard:	Winter Storm
S	staffing, Equipment contracts
W	Depends on Duration
Ob	staff time management
Opps	shared services

Hazard:	Power Outages
S	more generator capability
W	some facilities still without generators
Ob	funding - rear yard service
Opps	Grants

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Jeffrey McElroy

Department/Agency: OEM

Municipality: TWSP of CEDAR GROVE

Email: jmcelroy@cedargrovepd.org

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	SEVERE STORM
S	TREE TRIMMING ALERT NOTIFICATIONS
W	DRAINAGE UPGRADES / CLEARING OF RIVERWAYS
Ob	PUBLIC EDUCATION OF FEMA FUNDING ROADWAY FLOODING / CLOSING
Opps	GRANTS PUBLIC OUTREACH

Hazard:	POWER OUTAGES
S	MORE GENERATORS FOR PUBLIC BUILDINGS (INFRASTRUCTURE)
W	MORE GENERATORS NEEDED FOR PUBLIC BUILDINGS / INFRASTRUCTURE.
Ob	BUDGET
Opps	GRANTS PUBLIC OUTREACH

Hazard:	WINTER STORM
S	SNOW REMOVAL ALERT NOTIFICATIONS
W	NUMER OF EMPLOYEES FOR DURATION OF STORM EQUIPMENT AVAILABILITY
Ob	BUDGET ROADWAY CLOSING
Opps	GRANTS PUBLIC OUTREACH

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Joel Martin

Department/Agency: [redacted] OEM Coordinator

Municipality: Verona Township

Email: joel.martin@veronapolice.org

Please identify the hazard of concern and list any Strengths, Weaknesses, Obstacles, or Opportunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Power Outage
S	communicate
W	beyond our control
Ob	"
Opps	better communication w/ utility

Hazard:	winter storm
S	control of resources
W	timing beyond our control
Ob	timing
Opps	public communication

Hazard:	Severe Storm
S	tree trimming mutual aid
W	underground
Ob	Cost
Opps	stay home!!

Hazard:	drainage / flood
S	pre-plan
W	inflow into sewer
Ob	old infastructure
Opps	pre-plan

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: MARK GUILIANO

Department/Agency: OEM

Municipality: CALDWELL

Email: FIREOFFICIAL@CALDWELL-NJ.COM

Please identify the hazard of concern and list any **S**trengths, **W**eaknesses, **Ob**stacles, or **Opp**ortunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	FLOOD
S	- KNOWLEDGE OF VOLNERABLE AREAS - EXPERIANCE WITH FLOODING - PLANNING BOARD REVIEWS
W	- INADEQUETE DRAINAGE SEWERS & CULVERTS ESPECIALLY DOWNTOWN - MOST STREAMS TAKING RUNOFF LOCATED ON PRIVATE PROPERTY
Ob	- DEVELOPMENT OF NEIGHBORING COMMUNITIES INCREASING RUNOFF IN OUR DOWNTOWN - OUR LOCAL MUNICIPALITY CANNOT AFFORD IMPROVEMENTS
Opps	- GRANT FUNDING - BETTER MAINTENANCE OF COUNTY STORM DRAINS & CULVERTS

Hazard:	Power outages.
S	A lot of municipal bulidings have back up generators. - Cooling / Heating centers
W	- Don't Work Well with Power Company. -
Ob	- Communications with Power Company.
Opps	- Timing of outages - giving residents time lines

Hazard:	STORMS
S	- County Assists Well with our municipality.
W	- MUNICIPALITY IS HEAVILLY COVERED WITH LARGE TREES - SMALL BUT VERY CONGESTED - OLD INFRASTRUCTURE - ELECTRIC
Ob	- Manpower issue's Within the towns DPW.
Opps	- Preplanning by tree triming and Pre treating Roadways before Snowfalls.

Hazard:	Earthquake
S	- Can call County USAR teams if needed. - Mutal aid
W	- Soil in our municipality.
Ob	- Not a lot of experience responding to earthquek Emergencies
Opps	- training and education.

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: Jim Egan

Department/Agency: Water Dept / OEM

Municipality: Essex Fells

Email: JimEgan103@Gmail.com

Please identify the hazard of concern and list any Strengths, Weaknesses, Obstacles, or Opportunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Power outages
S	
W	Many Trees in Town
Ob	
Opps	Trim Trees over wires

Hazard:	Terrorism
S	
W	Essex Fells Supplies water To 5 Towns
Ob	
Opps	up Grade Security with Fences and Alarms with Grant Funding

Hazard:	Winter Storms
S	we Have a Plan That Plows, Fire, Police + Rescue Follow,
W	Many Hills in Town
Ob	
Opps	To Fine Tune our Plan, it worked well in Winter OF 2019

Hazard:	
S	
W	
Ob	
Opps	

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: JOHN DASCENZO

Department/Agency: OEM

Municipality: NORTH CALDWELL

Email: JDERIF@GMAIL.COM

Please identify the hazard of concern and list any **Strengths**, **Weaknesses**, **Obstacles**, or **Opportunities** regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	~~INTERRUPTION OF~~ POWER OUTAGE
S	GENERATORS ON KEY FACILITIES
W	PEOPLE WITH SPECIAL NEEDS
Ob	~~FOW~~ FUNDS
Opps	HAVE BATTERIES & CHARGE CELL PHONES

Hazard:	SEVERE STORM
S	CHAIN SAWS CREWS
W	MANPOWER
Ob	FUNDS
Opps	NICE TO STAY HOME

Hazard:	WINTER STORM
S	SNOW REMOVAL VEH.
W	MORONS DRIVING WHEN THEY SHOULD BE HOME
Ob	FUNDS
Opps	NICE TO STAY HOME

Hazard:	~~TERRORISM~~ FLOOD
S	BOATS & HIGH WATER VEHICLES
W	FLASH FLOODS
Ob	FUNDS
Opps	NICE FOR EVACUATION

Essex County
2020 Hazard Mitigation Plan Update

Strengths, Weaknesses, Obstacles and Opportunities Worksheet

Name: William Smith
Department/Agency: Fairfield OEM
Municipality: Fairfield
Email: wsmith@fairfieldnj.org

Please identify the hazard of concern and list any **S**trengths, **W**eaknesses, **Ob**stacles, or **Opp**ortunities regarding County and/or municipal capabilities to mitigating hazard impacts.

Hazard:	Flood
S	1) Responce, Fire, Police, EMS 2) Emergency Notification to Community 3) High water Vehicles
W	1) Forcasting Flood Levels 2) Damming of Levees water Storage facilities (NJ Infrastructure
Ob	3) Manpower 4) Damages
Opps	

Hazard:	Winter & Storms
S	1) Plows, DPW
W	1) Man Power 2) Equipment break down
Ob	
Opps	

Hazard:	Severe Storms
S	1) Tree Trimming 2) Generators 3)
W	1) Power lines are all above ground 2) Trees
Ob	
Opps	

Hazard:	Power Outages
S	
W	
Ob	
Opps	

B.6 Annex Signature Pages

In preparation for the draft plan public review, each jurisdiction was requested to have their 'mitigation team' review their annex to ensure it was complete and accurate for posting to the Essex County Sheriff's mitigation website. To demonstrate broad and comprehensive review and input, each jurisdiction collected signatures from these representatives. The following are the annex signature pages submitted by all jurisdictions.

Jurisdictional Annex Review Sign-Off Sheet

ESSEX COUNTY

County Administrator

Name	Signature	Date
Robert D. Jackson		12/6/19

County Sheriff

Name	Signature	Date
ARMANDO B. FONSECA		12-6-19

County Office of Emergency Management

Name	Signature	Date
EDWARD ESPOSITO		12/6/19

County Engineer

Name	Signature	Date
SANJEEV VARGHESE		12/6/19

County Public Works Director

Name	Signature	Date
SANJEEV VARGHESE		12/6/19

County Planning Director

Name	Signature	Date
DAVID Antonio	D. Antonio	12/06/19

County Public Information Director

Name	Signature	Date
ANTHONY V. PUGLISI		12/6/19

Jurisdictional Annex Review Sign-Off Sheet

BELLEVILLE TOWNSHIP

MUNICIPALITY NAME

Mayor/Administrator

Name	Signature	Date
[illegible]	M. McIlhan	11/20/19

Engineer

Name	Signature	Date
THOMAS J. HERITS	[signature]	11/12/19

Fiscal/CFO

Name	Signature	Date
JAVIER SILVA	[signature]	11/22/19

Building Code Official

Name / Title	Signature	Date
Frank DeLorenzo	[signature]	11/12/19

Floodplain Administrator

Name / Title	Signature	Date
Frank DeLorenz	[signature]	11/12/19

Emergency Manager

Name / Title	Signature	Date
MARTIN LAZ, OEM Coordinator	[signature]	11/12/19

Land Use Planner

Name / Title	Signature	Date
Frank DeLorenz	[signature]	11/12/19

Public Works Director

Name / Title	Signature	Date
William Gilbert	[signature]	10/24/19

Police Department

Name / Title	Signature	Date
NICHOLAS BREINER, CAPTAIN	[signature]	11/12/19

Fire Department

Name / Title	Signature	Date
MARTIN LAZ, Deputy Chief	[signature]	11/12/19

Jurisdictional Annex Review Sign-Off Sheet

Bloomfield Township

MUNICIPALITY NAME

Management

Mayor/Administrator

MATTHEW V. WATKINS — Name | Signature | 2/10/2020 — Date

Engineer

Paul D. Lasek — Name | Signature | 2-11-20 — Date

Fiscal/CFO

Robert Remec — Name | Signature | 2-11-20 — Date

Building Code Official

Dale Dube — Name / Title | Signature | 2.11.20 — Date

Floodplain Administrator

Paul D. Lasek — Name / Title | Signature | 2-11-20 — Date

Emergency Manager

Frederick Mengel — Name / Title | Signature | 2/10/2020 — Date

Land Use Planner

Bonnie Flynn, Planning Director — Name / Title | Signature | 2/11/20 — Date

Public Works Director

Anthony Nesto — Name / Title | Signature | 2-11-2020 — Date

Police Department

Sean Sweet Dep Chf — Name / Title | Signature | 2-11-20 — Date

Fire Department

Louis Venezia — Name / Title | Signature | 2-11-2020 — Date

Jurisdictional Annex Review Sign-Off Sheet

CALDWELL BOROUGH
MUNICIPALITY NAME

Mayor/Administrator

Name	Signature	Date
THOMAS A. BANKER		12/9/19

Engineer

Name	Signature	Date
Glenn Beckmeyer		12/10/19

Fiscal/CFO

Name	Signature	Date
CHRIS DATTAGUA		2019-12-11

Building Code Official

Name / Title	Signature	Date
Paul Milani		12-5-19

Floodplain Administrator

Name / Title	Signature	Date
Paul Milani		12-5-19

Emergency Manager

Name / Title	Signature	Date
Mark Giuliano OEM COORDINATOR		12/3/19

Land Use Planner

Name / Title	Signature	Date

Public Works Director

Name / Title	Signature	Date
Mario Bifalco DIRECTOR PUBLIC WORKS		12-3-19

Police Department

Name / Title	Signature	Date
James H. Bongiorno Chief of Police		12/10/19

Fire Department

Name / Title	Signature	Date
GARY GARAMELLA		12/10/19

Jurisdictional Annex Review Sign-Off Sheet

TOWNSHIP OF CEDAR GROVE
MUNICIPALITY NAME

Mayor/Administrator MANAGER

Name	Signature	Date
THOMAS TUCCI		12-4-2019

Engineer

Name	Signature	Date
Alex Palumbo, Twp. Engs.		12/4/19

Fiscal/CFO

Name	Signature	Date
WILLIAM M. HOMA		12/3/19

Building Code Official

Name / Title	Signature	Date
John D'ascensio	John D'Ascensio	12/3/19

Floodplain Administrator

Name / Title	Signature	Date
Alex Palumbo, Twp. Engs.		12/4/19

Emergency Manager

Name / Title	Signature	Date
Jeffrey McElroy OEM		12-3-19

Land Use Planner

Name / Title	Signature	Date
Alex Palumbo, Twp. Engs.		12/4/19

Public Works Director

Name / Title	Signature	Date
Alex Palumbo, Twp. Engs		12/4/19

Police Department

Name / Title	Signature	Date
J CIRASA CHIEF OF POLICE		12-3-19

Fire Department

Name / Title	Signature	Date
D SHAULIS CCFD Chief	D. Shaulis	12/3/19

Jurisdictional Annex Review Sign-Off Sheet

NEWARK
MUNICIPALITY NAME

Mayor/Administrator		
Ras J. Baraka, Mayor Name	Signature	11/20/19 Date
Engineer		
Phil Scott, Director Name	Signature	11/15/19 Date
Fiscal/CFO		
Danielle A. Smith, Director Name	Signature	11/18/19 Date
Building Code Official		
NAGPAL Tony Nagpal Name / Title	Signature	11/15/19 Date
Floodplain Administrator		
Phil Scott, Director Name / Title	Signature	11/15/19 Date
Emergency Manager		
Dorian Herrell, Coordinator Name / Title	Signature	11-15-19 Date
Land Use Planner		
Allison Ladd, Director Name / Title	Signature	11/15/19 Date
Public Works Director		
Khalif Thomas, Director Name / Title	Signature	11/18/19 Date
Police Department		
Darnell Henry, Chief Name / Title	Signature	11/19/19 Date
Fire Department		
Rufus F. Jackson, Chief Name / Title	Signature	11/18/19 Date

Jurisdictional Annex Review Sign-Off Sheet

The City of East Orange
MUNICIPALITY NAME

Mayor/Administrator

Solomon Steplight — Name
Signature — Date: 11/15/19

Engineer

June Zheng — Name
Signature — Date: 11-22-19

Fiscal/CFO

Juan B. Uribe — Name
Signature — Date: 11/18/19

Building Code Official

Lydia Rolling — Name / Title
Signature — Date: 11/22/19

Floodplain Administrator

Christopher Coke — Name / Title
Signature — Date: 11/18/19

Emergency Manager

Solomon Steplight — Name / Title
Signature — Date: 11/15/19

Land Use Planner

Joseph Bianco — Name / Title
Signature — Date: 11/15/19

Public Works Director

Christopher Coke — Name / Title
Signature — Date: 11/18/19

Police Department

Phyllis L. Bindi — Name / Title
Signature — Date: 11/18/19

Fire Department

Andre M. Williams — Name / Title
Signature — Date: 11-14-19

Jurisdictional Annex Review Sign-Off Sheet

Essex Fells Township
MUNICIPALITY NAME

Mayor/Administrator
Edward A. Davis, Mayor — Name — Signature — 11-22-19 Date

Engineer
EVAN M. JACOBS, PE, PP
NEGLIA ENGINEERING ASSOC. — Name — Signature — 12/04/19 Date

Fiscal/CFO
CHRIS BATTAGLIA — Name — Signature — 2019-12-04 Date

Building Code Official
CARL THURELL — Name / Title — Signature — 12/4/19 Date

Floodplain Administrator
N/A — Name / Title — N/A Signature — N/A Date

Emergency Manager
Director of OEM
James M. Egan — Name / Title — Signature — 11/22/19 Date

Land Use Planner
Environmental Forester
Andrew Bruhn — Name / Title — Signature — 12/6/19 Date

Public Works Director
Roger Kerr — Name / Title — Signature — 11-22-19 Date

Police Department
William Thelecke, COP — Name / Title — Signature — 11-22-19 Date

Fire Department
James Kearney / Chief — Name / Title — Signature — 11-22-19 Date

Jurisdictional Annex Review Sign-Off Sheet

Township of Fairfield
MUNICIPALITY NAME

Mayor/Administrator
Joseph Catenaro, Administrator
Joseph Catenaro
Name
Signature
11/4/19
Date

Engineer
Steve Bury, Engineer
Name
Signature
11/4/19
Date

Fiscal/CFO
John McClusky, CFO
Name
Signature
11/1/19
Date

Building Code Official
Phil Cheff, Construction Official
PH. LIP CHEFF C.O
Name / Title
Signature
11/4/19
Date

Floodplain Administrator
Phil Cheff, Flood Plain Manager
PHILIP CHEFF FPM
Name / Title
Signature
11/4/19
Date

Emergency Manager
William Smith, OEM Coordinator
Name / Title
Signature
11-1-19
Date

Land Use Planner
Steve Bury, Engineer
Name / Title
Signature
11-4-19
Date

Public Works Director
Robert Payne, DPW Superintendent
Name / Title
Signature
11-1-19
Date

Police Department
Anthony Manna, Police Chief
Name / Title
Signature
11-1-19
Date

Fire Department
Andrew Williams, Fire Chief
Name / Title
Signature
11/1/19
Date

Jurisdictional Annex Review Sign-Off Sheet

Borough of Glen Ridge
MUNICIPALITY NAME

~~Mayor~~/Administrator
~~Stuart K. Patrick~~ Michael J Rohal — 11/12/19
Name — Signature — Date

Engineer
Michael J. Rohal — 11/12/19
Name — Signature — Date

Fiscal/CFO
Matt Laracy — 11/12/19
Name — Signature — Date

Building Code Official
Felix Esposito — 11/12/19
Name / Title — Signature — Date

Floodplain Administrator
Michael J. Rohal — 11/12/19
Name / Title — Signature — Date

Emergency Manager
Michael J. Rohal — 11/12/19
Name / Title — Signature — Date

Land Use Planner
Michael Zichelli — 11/12/19
Name / Title — Signature — Date

Public Works Director
William Bartlett — 11/12/19
Name / Title — Signature — Date

Police Department
Chief Sheila Byron-Lagattuta — 11/12/19
Name / Title — Signature — Date

Fire Department
Chief John Herrmann — 11/12/19
Name / Title — Signature — Date

MUNICIPALITY NAME

Jurisdictional Annex Review Sign-Off Sheet

Township of Irvington
MUNICIPALITY NAME

	Name	Signature	Date
Mayor/Administrator	Tony Vauss, Mayor		11/11/19
Engineer	John A. Wiggins, P.E., P.P.		11/4/19
Fiscal/CFO	Faheem Ra'Oof, CFO		11/4/19
Building Code Official	Leslie Graham, Construction Official		11/4/19
Floodplain Administrator	John A. Wiggins, P.E., P.P., Township Engineer		11/11/19
Emergency Manager	John Brown, OEM Director		11/11/19
Land Use Planner	John A. Wiggins, P.E., P.P. , Township Engineer		11/4/19
Public Works Director	Jamel Holley, Dir. of Public Works		11/11/19
Police Department	Tracy Bowers, Dir. of Public Safety		11/11/19
Fire Department	John Brown, Fire Director		11/4/19

Jurisdictional Annex Review Sign-Off Sheet

Livingston Twp.
MUNICIPALITY NAME

Mayor/Administrator

Barry R. Lewis, Sr. | Name | Signature | Date

Engineer

Jeannette Harduby | Name | Jeannette Harduby | Signature | 11/6/19 | Date

Fiscal/CFO

Nada Akmal (Assistant CFO) | Name | Signature | 11/16/19 | Date

Building Code Official

Martin Chiaviazzi | Name / Title | Signature | 11/8/19 | Date

Floodplain Administrator

Jeannette Harduby | Name / Title | Jeannette Harduby | Signature | 11/6/19 | Date

Emergency Manager

Christopher C. Mullin | Name / Title | Signature | 11/6/19 | Date

Land Use Planner

ASLA Jackie Hollis | Name / Title | Signature | 11/6/19 | Date

Public Works Director

Michael Anello, Superintendent | Name / Title | Signature | 11/7/19 | Date

Police Department

Chief Gary Marshuetz | Name / Title | Signature | 11/6/19 | Date

Fire Department

Christopher C. Mullin Chief | Name / Title | Signature | 11/6/19 | Date

Jurisdictional Annex Review Sign-Off Sheet

Township of Maplewood

	Name	Signature	Date
Mayor/Administrator	Sonia Alves Viveiros	Sonia Alves Viveiros	11/7/2019
Engineer	Paul J. Kittner Jr.		11/5/19
Fiscal/CFO	JOSEPH KOLODZIEJ	Joseph C Kolodziej	11/07/19
Building Code Official	Len Mendola		11/7/19
Floodplain Administrator	Paul J. Kittner Jr.		11/5/19
Emergency Manager	VICTOR DELUCA	Victor DeLuca	11/12/19
Land Use Planner - N/A			
Public Works Director	Calvin Bell		11/13/19
Police Department	Jim Dellacio - Chief		11/8/19
Fire Department	MICHAEL C. WEBER CHIEF	Michael C. Weber	11/8/19

Jurisdictional Annex Review Sign-Off Sheet

Township of Millburn

Mayor/Administrator

Alexander McDonald — Name

Signature

10/31/19 — Date

Engineer

MARTHA CALLAHAN — Name

Martha Callahan — Signature

10/31/19 — Date

Fiscal/CFO

Jason Gabloff — Name

Signature

10/31/19 — Date

Building Code Official

Jerry Eger Construct Official — Name / Title

Jerry Eger — Signature

11-5-19 — Date

Floodplain Administrator

MARTHA CALLAHAN / TWP ENGINEER — Name / Title

Martha Callahan — Signature

10/31/19 — Date

Emergency Manager

CHRIS BERRY Coordinator — Name / Title

Signature

10-31-19 — Date

Land Use Planner

Name / Title

Signature

Date

Public Works Director

JAMES DISANO — Name / Title

Signature

10/31/19 — Date

Police Department

Brian Gilfedder Chief — Name / Title

Signature

11/6/19 — Date

Fire Department

Name / Title

Signature

10/31/19 — Date

Robert Echavarria

Jurisdictional Annex Review Sign-Off Sheet

Township of Montclair
MUNICIPALITY NAME

Mayor/Administrator

Name	Signature	Date
TIMOTHY STAFFORD		11/5/19

Engineer

Name	Signature	Date
Stephen Wood / Director-DCS		11/12/19

Fiscal/CFO

Name	Signature	Date
PADMAJA RAO		11/6/19

Building Code Official

Name / Title	Signature	Date
Samuel Souza		11/7/19

Floodplain Administrator

Name / Title	Signature	Date
Consultant		11/7/19

Emergency Manager

ROB BIANCO OEM Coord.

Name / Title	Signature	Date
Rob Bianco	Rob Bianco	11/6/19

Land Use Planner

Name / Title	Signature	Date
Janica Talley		11/6/19

Public Works Director

Name / Title	Signature	Date
Stephen Wood / Director-DCS		11/12/19

Police Department

Name / Title	Signature	Date
Todd Costanti / chief		11/5/19

Fire Department

Name / Title	Signature	Date
John Herrmann / Chief	John Herrmann	11/5/19

Jurisdictional Annex Review Sign-Off Sheet

Borough of North Caldwell
MUNICIPALITY NAME

Mayor/Administrator

Kevin O'Sullivan — Name
Signature — 2/27/20 Date

Engineer

Kevin O'Sullivan (for Paul Fecsicso) — Name
Signature — 2/28/20 Date

Fiscal/CFO

Richard T. Mondelli — Name
Signature — 2/27/20 Date

Building Code Official

Kevin O'Sullivan (for Paul Milani) — Name / Title
Signature — 2/28/20 Date

Floodplain Administrator

Kevin O'Sullivan (for Paul Milani) — Name / Title
Signature — 2/28/20 Date

Emergency Manager

JOHN D'ASCENSIO EMC — Name / Title
Signature — 2/27/20 Date

Land Use Planner

Kevin O'Sullivan (for Paul Milani) — Name / Title
Signature — 2/28/20 Date

Public Works Director

Bill Sticks Asst. Director — Name / Title
Signature — 2/28/20 Date

Police Department

MARK DEVER — Name / Title
CHIEF
Signature — 2/28/2020 Date

Fire Department

Kevin O'Sullivan (for Tim Peterson) — Name / Title
Signature — 2/28/20 Date

Jurisdictional Annex Review Sign-Off Sheet

Township of Nutley

MUNICIPALITY NAME

Mayor/Administrator

JOSEPH P. SCIAMPACI — Name | Signature | 12/11/19 — Date

Engineer

DREW DISESSA — Name | Signature | 12/12/19 — Date

Fiscal/CFO

Rosemary Costa — Name | Signature | 12/10/19 — Date

Building Code Official

DAVID BERRY — Name / Title | Signature | 12/11/19 — Date

Floodplain Administrator

SALVATORE FERRARO — Name / Title | Signature | 12/10/19 — Date

Emergency Manager

William Cassidy OEM Coordinator — Name / Title | William Cassidy — Signature | 12/12/19 — Date

Land Use Planner

JOSEPH P. SCIAMPACI DC — Name / Title | Signature | 12/11/19 — Date

Public Works Director

JOSEPH P. SCIAMPACI DC — Name / Title | Signature | 12/11/19 — Date

Police Department

Tom STIZMOLO Chief — Name / Title | Signature | 12/9/19 — Date

Fire Department

Paul Cafone D/C — Name / Title | Signature | 12/12/19 — Date

Jurisdictional Annex Review Sign-Off Sheet

City of Orange Township
MUNICIPALITY NAME

Mayor/Administrator

Christopher Hartwyk, Business Administrator — Signature — 3/31/2020
Name — Signature — Date

Engineer

Marty Mayes, DIR OF DPW — Signature — 4/2/2020
Name — Signature — Date

Fiscal/CFO

Nile Clements, CFO — Signature — 4/2/2020
Name — Signature — Date

Building Code Official

Paul Arthur, Construction Code Off. — Signature — 4/1/2020
Name / Title — Signature — Date

Floodplain Administrator

Marty Mayes, DIR. OF DPW — Signature — 4/2/2020
Name / Title — Signature — Date

Emergency Manager

Ray Wingfield, OEM Coodinator — Signature — 4/2/2020
Name / Title — Signature — Date

Land Use Planner

MARTY MAYES, DIR OF PLNG — Signature — 4/2/2020
Name / Title — Signature — Date

Public Works Director

MARTY MAYES, DIR. OF Public Works — Signature — 4/2/2020
Name / Title — Signature — Date

Police Department

Todd WARREN, DIR. OF OPD — Signature — 4/2/20
Name / Title — Signature — Date

Fire Department

Keneth Douglas, DIR. of OFD — Signature — 04/01/2020
Name / Title — Signature — Date

Jurisdictional Annex Review Sign-Off Sheet

Borough of Roseland

Mayor/Administrator

Name	Signature	Date

Engineer

Name	Signature	Date
JOSEPH D'Amato	Joseph G D'Amato	12/5/19

Fiscal/CFO

Name	Signature	Date
Maureen Chumacos	Maureen Chumacos	12.5.19

Building Code Official

Name / Title	Signature	Date
THOMAS JACOBSEN		11-26-19

Floodplain Administrator

Name / Title	Signature	Date
Gary Schall SUPT DPW		11/13/19

Emergency Manager

Name / Title	Signature	Date
John MATHEIS/COORDINATOR		12/15/19

Land Use Planner

Name / Title	Signature	Date
Daniel Bloch, Borough Planner		11/15/19

Public Works Director

Name / Title	Signature	Date
Gary Schall SUPT DPW		11/13/19

Police Department

Name / Title	Signature	Date
Richard McDonough		12-5-19

Fire Department

Name / Title	Signature	Date
William YATES		11/13/19

Jurisdictional Annex Review Sign-Off Sheet

Township of South Orange Village

Mayor/Administrator

Adam Loehner
Name

Signature

Date

Engineer

Salvatore Renda
Name

Signature

Date

Fiscal/CFO

Christopher Battaglia
Name

Signature

Date

Building Code Official

Anthony Grenci
Name / Title

Signature

Date

Floodplain Administrator

Salvatore Renda
Name / Title

Signature

Date

Emergency Manager

Scott Egelberg
Name / Title

Signature

Date

Land Use Planner

Philip Abramson
Name / Title

Signature

Date

Public Works Director

Michael Candarella
Name / Title

Signature

Date

Police Department

Kyle Kroll
Name / Title

Signature

Date

Fire Department

Daniel Sullivan
Name / Title

Signature

Date

Jurisdictional Annex Review Sign-Off Sheet

Township of Verona
MUNICIPALITY NAME

Mayor/Administrator

Name	Signature	Date
Matthew Cavallo	Matthew Cavallo	11/22/19

Engineer

Name	Signature	Date
Michael DeCarlo		11/22/19

Fiscal/CFO

Name	Signature	Date
Matthew Lasacy		11/24/19

Building Code Official

Name / Title	Signature	Date
Thomas Jacobsen, CO		11/22/19

Floodplain Administrator

Name / Title	Signature	Date
Michael DeCarlo		11/22/19

Emergency Manager

Name / Title	Signature	Date
Joel Martin OEM Coordinator		11/25/19

Land Use Planner

Name / Title	Signature	Date

Public Works Director

Name / Title	Signature	Date
Charles Molinaro, Director		11/22/19

Police Department

Name / Title	Signature	Date
CHRIS KIERNAN, CHIEF		11/25/19

Fire Department

Name / Title	Signature	Date
	Matt Gifford Chief	11/25/19

Jurisdictional Annex Review Sign-Off Sheet

TOWNSHIP OF WEST CALDWELL
MUNICIPALITY NAME

Mayor/Administrator

Name	Signature	Date
Nikole Baltycki	Nikole Baltycki	11/26/19

Engineer

Name	Signature	Date
Kevin Boyer		11/26/19

Fiscal/CFO

Name	Signature	Date
Nikole Baltycki	Nikole Baltycki	11/26/19

Building Code Official

Name / Title	Signature	Date
Robert McLaughlin CO	Robert McLaughlin	11/26/19

Floodplain Administrator

Name / Title	Signature	Date
Robert McLaughlin FPA	Robert McLaughlin	11/26/19

Emergency Manager

Name / Title	Signature	Date
Larry Peter OEM		11-26-19

Land Use Planner

Name / Title	Signature	Date
Danie Bloch, Twp Planner		11/26/19

Public Works Director

Name / Title	Signature	Date
VINCENT GRAZIOSA DPW SUPER		11/26/19

Police Department

Name / Title	Signature	Date
Dennis Capriglione (Capt-OIC)		11/26/19

Fire Department

Name / Title	Signature	Date
CHIEF MICHAEL LUKAS		11/26/19

Jurisdictional Annex Review Sign-Off Sheet

Township of West Orange

Mayor/Administrator

Robert D. Parisi
Name | Signature | Date

Engineer

Leonard R. Lepore
Name | Signature | Dec. 9, 2019
Date

Fiscal/CFO

John O. Gross
Name | Signature | Dec. 9, 2019
Date

Building Code Official

Thomas Tracey
Name / Title Construction Official | Signature | Date

Floodplain Administrator

Leonard R. Lepore
Name / Title Municipal Engineer | Signature | Dec. 9, 2019
Date

Emergency Manager

Dominic Allegrino
Name / Title OEM Coordinator | Signature | Dec. 9. 2019
Date

Land Use Planner

Paul Grygiel
Name / Title Director | Signature | Date

Public Works Director

Leonard R. Lepore
Name / Title Director | Signature | Dec 9, 2019
Date

Police Department

James Abbott
Name / Title Chief | Signature | Dec.09, 2019
Date

Fire Department

Anthony Vecchio
Name / Title Chief | Signature | Date

APPENDIX C. MEETING DOCUMENTATION

Appendix C includes meeting agendas, sign-in sheets and meeting notes (where applicable and available) for meetings convened during the development of the Essex County HMP update.

Essex County
2020 Hazard Mitigation Plan Update
Meeting Notes

Purpose of Meeting:	Project Management Team Meeting
Location of Meeting:	Conference Call
Date of Meeting:	June 11, 2019; 1:00pm

Attendees:

Captain Ed Esposito (Essex County)
Stephanie Knox (Essex County)
Alison Miskiman (Tetra Tech)

Agenda Summary: To commence the Hazard Mitigation Plan update with the contract consultant – Tetra Tech Inc.

Item No.	Description *(italicized text reflects discussion points/decisions made during meeting)*	Action item(s):
1	Scope and Schedule • Brief review of our approved proposal • Expiration March 13, 2020 per FEMA Final Approval Letter *Aim to have a draft HMP in public review December 2019 with NJOEM review in January.*	Tetra Tech – • Include Stephanie Knox on all emails • Assist with NJOEM quarterly reports.
2	Municipal Participation – Letters of Intent to Participate (LOIP) • Email to all municipal coordinators (Email and LOIP template) – *sent out on June 5th; LOIPs have already been submitted.* • Informational meeting on June 20 for all Municipal Coordinators (15 min) *The Captain will introduce the upcoming start to the HMP; Tetra Tech is the selected consultant; and emphasize participation and upcoming municipal meetings with Tetra Tech*	Essex County to provide copies of the LOIPs to Tetra Tech
3	Review Steering Committee Composition - refer to 2015 Steering Committee members in Excel	Essex County will review the Steering Committee composition and send back the revised committee Essex County will request Steering Committee participation via letter
4	Information and Data Collection • GIS Point of Contact for spatial data o Previous 2015 critical facility list – PCII data – o Lifelines – FEMA incorporating into mitigation • Point of Contact for reviewing Public Information (brochure/surveys/announcements) o Diversity Marketing & Communications materials (Spanish and Portuguese) o Draft content for website update, informational brochure, social media content *(for municipalities to use)*, press releas and public meeting announcements o Citizen survey	Essex County to review critical facility inventory and add lifelines Tetra Tech to send the following materials: • Draft newsletter • Draft press release • Website content - update

	○ Updated County seal to use • Stakeholders	
5	Meeting Logistics • Schedule first Steering Committee meeting • Schedule HMP Kick-Off	Tetra Tech to send meeting announcement language
6	In-Kind Tracking • County can begin tracking all time with the development of RFP, reviews, meetings, this call etc. • Tetra Tech to track meeting attendance for all participants	Essex County to collect rates

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting - Livingston, NJ
MEETING DATE: July 9, 2019 11/6

Name	Title	Agency/Municipality	Phone Number	Email
GLENN TURTLETAUB	TOWNSHIP CLERK	TOWNSHIP OF LIVINGSTON	(973) 535-7966	townclerk@livingstonnj.org
11/6 Jeannette Harduby	Twp. Engineer	Livingston	973 535-7950	jharduby@livingstonnj.org
Michael Caetano	Building Sub-code	Livingston	973-535-7957	MCaetano@livingstonnj.org
11/6 Christopher Mullin	Fire Chief/OEM Coordinator	Livingston	(973) 992-2373	Cmullin@livingstonnj.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Township of Verona Jurisdictional Annex Meeting
MEETING DATE: July 10th, 9:00AM

Name	Title	Agency/Municipality	Phone Number	Email
Mike DeCarlo	Engineer	Verona	973-239-8146	mpecarlo@verona-nj.com
Rick Neale	Fire Official	"	973-857-4761	rneale@veronanjorg
Joel Martin	OEM Coordinator	Verona	973 857 4919	joel.martin@veronapolice.org
George Zehnder	Supervisor	Verona DPW	201-247-6674	gzehnder@VeronaNJ.org
Matthew Cavallo	Twp Manager	Verona Twp.	973-857-4767	MCavallo@theronanj.org
Vincent Colaviti Jr.	Fire Inspector	Verona Twp.	973-857-4761	VColaviti@VeronaNJ.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting Borough of Roseland
MEETING DATE: July 12, 2019

Name	Title	Agency/Municipality	Phone Number	Email
Gary Schall	SUPT DPW	Borough of Roseland	(973)226-6565	gschall@roselandnj.org
JOHN MATHEIS	OEM COORDINATOR	BOROUGH OF ROSELAND	973 403-6840	JMATHEIS@ROSELANDNJ.ORG

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting Millburn Township
MEETING DATE: July 15, 2019

10/31/19

Name	Title	Agency/Municipality	Phone Number	Email
Michael Mulligan	Captain	Millburn PD	973-564-7030	mmulligan@millburntwp.org
MARTHA CALLAHAN 10/31/19	TWP. ENGINEER	MILLBURN	973-564-7052	mcallahan@millburntwp.org
Alex McDonald 10/31/19	Bus. Administrator	Millbur	973-564-7075	amcdonald@millburntwp.org
CHRIS BEADY 10-31-19	OEM Coordinator	MLCC BURN	973-564-7035	CBeady@MLCCBurn.org
Jimmy Homsi	Asst. B.A.	Millburn	973 564 7072	Jhomsi@millburntwp.org
Robert Echavarria	Fire Chief/Dep Coord.	Millburn	973-564-7040	rechavarria@millburntwp.org
JAMES DISTASO	PUBLIC WORKS SUPT.	MILLBURN	973-564-7061	JDistaso@MillburnTwp.org
Jesse Moehlman	Admin Analyst	Millburn	973-564-7088	jmoehlman@millburntwp.org
Jim Homsi	Asst. B.A.	Millburn	973 564 7072	Jhomsi@millburntwp.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting Township of South Orange Village
MEETING DATE: July 16, 2019

Name	Title	Agency/Municipality	Phone Number	Email
Adam Lochner	Administrator	South Orange	973 378-7715 x2	alochner@southorgnsc.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting Township Maplewood
MEETING DATE: July 18, 2019 , Oct. 10, 2019

Name	Title	Agency/Municipality	Phone Number	Email
Tim DeVaul	Chief	Maplewood PD	973-761-7901	JDeVaul@TwpMaplewood.NJ.US
Len Mendola	Construction Official	Maplewood Building Dept	973 762 8120	lmendola@twp.maplewood.nj.us
Michael Dingelstedt	Chief	Maplewood PD	973-762-6500ext 11	mdingelstedt@twp.maplewood.nj.us
Paul J. Kiffmeyer Jr.	Twp Engineer	" Engineering	973-762-8120x3305	engineer@twp.maplewood.nj.us
Sonia Alves-Viveiros	Business Administrator	Maplewood Admin	973-762-8120 Ext. 2000	SAlveiros@twp.maplewood.nj.us
Husam Zeidan	Asst. Twp Engineer	Maplewood Engineering	973-762-8120x3501	husam.zeidan@twp.maplewood.nj.us
Gabriel Bell	Public Works Director	Maplewood DPW	973-762-2712	gbell@twp.maplewood.nj.us

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Joint Kickoff Meeting for the Steering Committee and Plan Participants
July 18, 2019 at 9:00am

Welcome and Opening Remarks: *Essex County Sheriff's Office*

Why is Hazard Mitigation Important? *Alison Miskiman, Project Manager, Tetra Tech*

Mitigation Planning Process: *Alison Miskiman, Project Manager, Tetra Tech*

Overview of the Current Plan: *Alison Miskiman, Project Manager, Tetra Tech*

Why is Municipal Participation Important? *Christopher Testa, Hazard Mitigation Unit Manager, NJ State Police, Office of Emergency Management – Recovery Bureau*

Strategies for Achieving Mitigation Goals: *Christopher Testa, Hazard Mitigation Unit Manager, NJ State Police, Office of Emergency Management – Recovery Bureau*

Participation Requirements and Timeline: *Alison Miskiman, Project Manager, Tetra Tech*

General Discussion/Q & A: *Alison Miskiman, Project Manager, Tetra Tech*

Wrap-up: *Essex County Sheriff's Office*

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Joint Steering Committee and Plan Participant Kickoff Meeting
MEETING DATE: July 18, 2019

Name	Title	Agency/Municipality	Phone Number	Email
NICK BREINER	DEPUTY OEM	BELLEVILLE	973-930-6024	NBREINER@BELLEVILLENJ.ORG
ED ESPOSITO	CAPTAIN	ESSEX [illegible]	973-909-2991	[illegible]
Jeff McElroy	OEM	CEDAR GROVE	973-737-4100	jmcelroy@cedargroveni.org
CHRIS BERRY	OEM	MILLBURN TWP	973-985-1500	CSeady@MILLBURN[illegible]
Joel Martin	OEM	Verona	973 857 4817	joel.martin@verona[illegible]
Gary Schall	DPW	Roseland	9732[illegible]565	GSchall@Roselandnj.net
John Schmunk	OEM	Essex Fells	201-615-2397	jschmunk@essexfellsboro.org
Jason Bhulai	OEM Rep.	Bloomfield	973-274-5806	bhulaija@ubnj.org
Christopher Mullin	Five Chief OEM Coordinator	Livingston	(973) 992-2373	CMullin@livingstonnj.org
PAUL KIRTNER	TWP ENGINEER	MAPLEWOOD	973-762-8120	engineer@maplewood.njus
CHRISTOPHER DOLIA	Maplewood PD	Maplewood	973 761 7883	CDOLIA@TWP.MAPLEWOOD.NJ.US
ROB BIANCO	OEM Coor.	MONTCLAIR	201-247-9405	rbianco@montclair[illegible]
Michael Zichelli	Deputy Admin	Glen Ridge	973-748-8444	mpzichelli@glenridgenj.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Joint Steering Committee and Plan Participant Kickoff Meeting
MEETING DATE: July 18, 2019

Name	Title	Agency/Municipality	Phone Number	Email
MARTY Lutz	OEM Coord.	Belleville	973-208-1355	mlutz@BellevilleFireDept.org
Kevin O'Sullivan	OEM Coord/Admin	N. Caldwell	201-306-3551	kosullivan@northcaldwell.org
Fitzgerald Figliuolo	OEM Dep Coord	Essex Sheriff	973-809-3897	ffigliuolo@essexsheriff.com
John Wiggins	Mun. Eng.	Irvington	973-399-6696	JWiggins@IrvingtonNJ.org
Matthew Cavallo	OEM Deputy	Verona	973-857-4767	MCavallo@veronanj.org
Tony Outerbridge		Irvington	9088688803	Touterbridge@Irvingtonnj.org
John Herrmann	Deputy OEM Coord	Montclair	973-809-6302	jherrmann@montclairnjusa.org
JOHN YAKIMIK	ENGINEER	ROSELAND	201-641-0770	JYAKIMIK@BOSWELLENGINEERING.COM
Larry Peter	OEM	Caldwell	973-747-9946	lpeter@caldwell.com
Lauren Agnew	PIO-Cty Exec	Essex County	973-621-4400	lshears@admin.essexcountyny.org
Anthony Puglisi	Pub. Info. Director	Essex County	973-621-2542	apuglisi@admin.essexcountyny.org
John D'Ascenzio	OEM-EMC	NORTH CALDWELL	973-477-0051	JDERIT@GMAIL.COM
Chris Tosh	~~NJOEM~~ M.T Unit Manager	NJOEM		

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Joint Steering Committee and Plan Participant Kickoff Meeting
MEETING DATE: July 18, 2019

Name	Title	Agency/Municipality	Phone Number	E-mail
DAN SHELLEY	OEM	WEST ORANGE	973809 3767	DSHELLEY @ WESTORANGE=
William Smith	Fairfield OEM	Fairfield	973-445-1550	WSmith@fairfieldnj.or
William Cassidy	Nutley OEM	Nutley	973 590 9802	WCassidy@nutleynj.org
LARRY Peter	@ EOC	West Caldwell	973-747-9946	LPeter @ westcaldwell.c
Adam Lochner	OEM	South Orange	973 378-7715 x2	alochner@southorangenj.org
Sal ferraro	~~OEM~~ Eng. Coord.	Nutley	973-284-4958	sferraro@nutleynj.org
Dr. JOSEPH SCARPELLI	MENTAL HEALTH ADM.	County of Essex	973-571-2821	JSCARPELLI@HEALTH.ESSEXCOUNTY.
ELVIN PADILLA JR.	OEM	ORANGE	973 747-9332	epadillajr@orangenj.gov
Mohammed Nusrain	JCP&L Rep	FEP&L	732-320-6301	hussainm@firstenergycorp.com
Tanya Fraser	Domestic Preparedness Planner	Newark OEM	973 877-9257	frasert@ci.newark.nj.us
Dorian Herrell	Coordinator OEM Newark	Newark OEM	201-259-6831	herrelld@ci.newark.NJ.US
Natasha Ortiz	OEM	East Orange	862-220-2677	natasha.ortiz@eastorange-nj.gov
David Williams	OEM/ Deputy Coord	East Orange	201-266-5357	David.williams@eastorange-nj.gov

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Joint Steering Committee and Plan Participant Kickoff Meeting
MEETING DATE: July 18, 2019

Name	Title	Agency/Municipality	Phone Number	Email
Stephanie Kraus	Detective	Essex County	973 324-9756	SKraus@essexsheriff.ca
Amir Jones	Undersheriff	Essex County	973-324-9750	ajones@essexsheriff.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Cedar Grove Jurisdictional Annex Meeting
MEETING DATE: 07/24/2019

Name	Title	Agency/Municipality	Phone Number	Email
Jeffrey McElroy	OEM	Twsp of Cedar Grove	973-239-4100	jmcelroy@cedargrovenj.org
John D'Ascenzio	Deputy OEM	Twsp of Cedar Grove	973-298-8915	cosecretary@cedargrovenj.org
Alex Palumbo	Twp. Engineer	Twp. of Cedar Grove	973-239-1410	engineer@cedargrovenj.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting – Borough of Glen Ridge
MEETING DATE: July 24, 2019 @ 10am

Name	Title	Agency/Municipality	Phone Number	Email
Michael Rohal	Borough Administrator	Glen Ridge	973.748.0303	mjrohal@glenridgenj.org
Sean Quinn	Captain of Police	Glen Ridge	201-306-7554	spquinn@glenridgenj.org
Michael Zichelli	Deputy Administrator	Glen Ridge	973-749-4004	mpzichelli@glenridgenj.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Irvington Jurisdictional Annex Meeting
MEETING DATE: July 25, 2019

Name	Title	Agency/Municipality	Phone Number	Email
John Wiggins	Engineer	Irvington	973-399-6696	jwiggins@irvingtonnj.org
Antonio Gary	Fire Chief/Deputy Coordinator	Irvington	973-416-5677	

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Township of Nutley - Jurisdictional Annex Meeting
MEETING DATE: July 30, 2019 @ 1:00pm

Name	Title	Agency/Municipality	Phone Number	Email
Salvatore Ferraro	Eng. Cord.	Nutley	973-284-4958	sferraro@nutleynj.org
William Cassidy	OEM Coordinator	Nutley	973-590-9802	WCassidy@nutleynj.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Township of Belleville - Jurisdictional Annex Meeting
MEETING DATE: July 31, 2019 @ 10:00am

Name	Title	Agency/Municipality	Phone Number	Email
NICHOLAS BREINER	DEPUTY OEM COORD.	BELLEVILLE POLICE	973-450-3398	NBREINER@BELLEVILLENJ.ORG
MARTIN LUTZ	OEM Coordinator	Belleville FIRE	973-450-3368	MLutz@BellevilleFireDept.org
Kelly Cavanaugh	Municipal Clerk	Twp. of Belleo.	973.450.3311	KCavanaugh@belleville nj.org
Bill Gilbert	Superintendent DPW	Township of Belleville	973 450 3412	repairshop@verizon.net
ROBERT WEITZEL	ROAD SUP. DPW	TWP. OF Belleville	973-865-1468	DPW@BELLEVILLENJ.NET.
ANTHONY D IACONO	TOWN MGR	TWP of Belleville	978-450-3322	AIACONO@Belleville.Net
TOM HERITS	ENGINEER	"	732-261-7934	therits@
TDeLorenzo@Belleville US NC	Consultant Official	TWP of Belleville	973-450-3410	maserconsulting.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Township of Bloomfield - Jurisdictional Annex Meeting
MEETING DATE: July 31, 2019 @ 1:00pm

Name	Title	Agency/Municipality	Phone Number	Email
Fred Menzel	OEM Coordinator	Bloomfield	973-418-2108	bvesfmen@aol.com
STEVE COPPOLA	ASSIT. ENGINEER	BLOOMFIELD	973 680-4008	scoppola@bloomfieldtwpnj.com
Jason Bhulai		Bloomfield	973-901-0764	jbhulai374@gmail.com
Jean-guy Lanture	IT Director	Bloomfield	973-680-4670	JLanture@Bloomfieldtwpnj.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: West Caldwell Jurisdictional Annex Meeting
MEETING DATE: 07/24/2019 1.5 hrs

Name	Title	Agency/Municipality	Phone Number	Email
VINNIE GRAZIOSA	DPW SUPER	WEST CALDWELL	973-226-2300	VGRAZIOSA@WESTCALDWELL.COM
Gerard Paris	W. Caldwell PD Chief	West Caldwell PD	973-226-4114	gparis@westcaldwellpd.com
Nikole Baltycki	Twp Administrator	West Caldwell	973-226-2300	nbaltycki@westcaldwell.co
John Pressler	Water Operator	West Caldwell	862-881-6972	jpressler@westcaldwell.com
MICHAEL LUKER	FIRE CHIEF	WEST CALDWELL FD	973-226-2300	MLUKER@WESTCALDWELL.COM
BOB McLoughlin	Flood Plain Coadinator Construction Official	WEST CALDWELL	973 226 2302	BMcLoughlin@WestCaldwell.com
Larry Peter	OEM	West Caldwell	973-[illegible]-9946	lpeter@westcaldwell.com
JOHN MEDINA	OEM / FD.	WEST CALDWELL	973.226.2302	jmedina@westcaldwell.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Township of Montclair Jurisdictional Annex Meeting
MEETING DATE: August 9th, 2019, 09:00AM

Name	Title	Agency/Municipality	Phone Number	Email
ROB BIANCO	OEM	TOWN OF MONTCLAIR	201-247-9405	rbianco@montclairnjusa.com
Janice Talley	~~Planning~~ Director of Planning	Montclair	973-509-4953	jtalley@montclairnjusa.org
Graham Petto	Assistant Planner	Montclair	973-509-4955	gpetto@montclairnjusa.org
BRIAN WILDE	DEPUTY CHIEF/OEM	MONTCLAIR	(973) 715-8096	BWILDE@MONTCLAIRNJUSA.ORG
John Herrmann	Fire Chief/OEM	Montclair	973-809-6302	jherrmann@montclairnjusa.org

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Steering Committee Meeting
August 27, 2019 at 10:00am

Introductions

Review of Steering Committee Role

Project Status Update
- *Review of goals*
- *Municipal Meetings*
- *Risk Assessment*

County Annex Update
- *Department-specific Meetings*
- *Review of Draft Sections*

Continued Public and Stakeholder Outreach
- *Senior Wellness Day*
- *Website and Social Media*

Review of Schedule and Next Steps
- *Risk Assessment Meeting*
- *Mitigation Strategy Meeting*
- *Focus Group Meetings*
- *Draft Plan Meeting*

General Discussion/Q & A

Wrap-up

Contact Information:
Alison Miskiman, 973-630-8045; alison.miskiman@tetratech.com

Essex County
2020 Hazard Mitigation Plan Update
Meeting Notes

Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Conference Call
Date of Meeting:	August 27, 2019

Attendees:

Sheriff's Office: Jose Torres, Stephanie Knox, Ryan Peter
Essex Regional Health: Rich Budris
Planning and Engineering: David Antonio
Bellville: Nick Breiner
Millburn: Robert Echavarria
Fairfield: Bill Smith
Tetra Tech: Alison Miskiman

Summary: See below

Item No.	Description *(italicized text reflects discussion points/decisions made during meeting)*	Action item(s):
1	**Introductions/Meeting Attendee Roll Call**	
2	**Review of Steering Committee Role**	Tetra Tech (Alison Miskiman) to distribute Steering Committee Guidelines
3	**Project Status Update and Schedule Review** • *Review of plan status: goals, hazards of concern, critical facility and lifeline updates* • *Municipal Meetings: Progress with municipal annex updates discussed* • *Risk Assessment: Currently underway with draft results to be presented at the 9/19 meeting. NJTPA climate change data to be integrated as available.* • *Draft plan available for public review by the end of the calendar year*	
4	**County Annex Update** • *County Department-specific meetings to be scheduled to discuss changes since the 2015 HMP including risk/impacts over the last 5 years, new planning efforts (county and regional), new development, progress on mitigation actions* • *Review of Draft Sections – Steering Committee to review as they are available this fall prior to being posted for public review on the Sheriff's website*	Tetra Tech (Heather Apgar) will be scheduling meetings with County Departments to update the County Annex Tetra Tech (Alison Miskiman) to distribute the 2015 County Annex for review and update by Steering Committee
5	**Continued Public and Stakeholder Outreach** • *Senior Wellness Day – 9/24 (brochures in English, Spanish and Portuguese; survey; County map with hazards) and giveaways. We will also have a translator there (Spanish).* • *The Sheriff's Office Mitigation Website already has posted the 1-page brochures, citizen survey and meeting announcements*	Steering Committee: - Consider venues/times for two public meetings when the Draft HMP is available for public review later this year

	• *Social Media – Facebook and Twitter posts are ready in English, Spanish and Portuguese. The posts announce the plan update, encourages residents to visit the Sheriff's Office Mitigation website and take the citizen survey.* • *Focus Group Sessions – Meetings with the following stakeholder sectors will be scheduled to collect information for the plan: 1) transportation systems; 2) water and wastewater systems and 3) power and telecommunications systems; and 4) green infrastructure and climate change adaptation* • *Bellville has already posted information on their website regarding the HMP update*	- Consider stakeholders to invite to upcoming Focus Group meetings - Update County/municipal websites and repost social media posts as they can and let Alison Miskiman know for documentation in the plan Essex Regional Health to repost announcements on Social Media County Planning can coordinate update of Public Works website with HMP information Tetra Tech (Alison Miskiman) to distribute updated website information, social media posts, and capture public outreach efforts for documentation in the plan.
6	**Review of Schedule and Next Steps** • *Risk Assessment Meeting - 9/19/2019 1000 hrs* • *Mitigation Strategy Meeting (NJOEM invited)- 10/24/2019 1000 hrs* • *Focus Group Meetings – Date TBD (October/November)* • *Draft Plan Meeting – Dates TBD (December/January)*	Steering Committee and Municipalities are asked to attend all scheduled meetings noted
7	**General Discussion/Q & A**	

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
TOPIC: Steering Committee Meeting – Conference Call
DATE: August 27, 2019

Name	Jurisdiction/Title	Present
Edward Esposito	Captain, Essex County OEM	X
Stephanie Knox	Detective, Essex County OEM	X
David Antonio	Essex County DPW - Planning	X
Luis E. Rodriguez, PE	Essex County Dept. Engineering	X
Robert Echavarria, CEM	Millburn Municipal OEM/Fire Chief	X
William Smith	Fairfield Municipal OEM	X
Captain Nick Breiner	Belleville OEM	X
Rich Budris	Essex Regional Health	X
Alison Miskiman	Tetra Tech	X

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting
MEETING DATE: September 18, 2019 – 11am - 1 PM

Name	Title	Agency/Municipality	Phone Number	Email
David Antonio	County Planner	Essex County	973-226-8500 x2580	DAntonio@essexcounty.org

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Risk Assessment Meeting with Planning Partnership
September 19, 2019 at 10:00am

Welcome and Opening Remarks

Project Status – *Where we are in the process; Public outreach*

Risk Assessment Overview

Hazard Ranking

SWOO (Strengths, Weaknesses, Obstacles and Opportunities) *related to impact of Highly-Ranked Hazards of Concern*

Development of Problem Statements

FEMA 2019 Hazard Mitigation Assistance Funding Opportunity

Next Steps

- *September 26 Webinar to learn more about FEMA FY19 funding (details below and refer to emails)*
- *October 24 Meeting for Steering Committee and Municipalities – 10am, Essex County EOC*
- *Finalize Annexes – opportunity to stay after 10/24 meeting to complete*

General Discussion/Q & A

Wrap-up

Project Contact Information:
Alison Miskiman (Tetra Tech), 973-630-8045; alison.miskiman@tetratech.com

September 26 Mitigation Funding Webinar:

1. *Call the conference number and follow along with the slides (to be distributed closer to the date) Conference #: 1-800-523-8437 Conference ID: 381 253 7941#*
2. *Follow along on your computer screen and listen via your computer, click Join Skype Meeting (in the email 9/12) and select the audio option (test this app in advance of the meeting if you want to follow along via the web)*

Essex County
2020 Hazard Mitigation Plan Update
Meeting Notes

Purpose of Meeting:	Risk Assessment Review and Strengths, Weaknesses, Opportunities and Obstacles Meeting (public meeting)
Location of Meeting:	Essex County EOC
Date of Meeting:	September 19, 2019

Attendees:

Refer to sign-in sheet

Agenda Summary:

Item No.	Description *(italicized text reflects discussion points/decisions made during meeting)*	Action item(s):
1	**Project Status** – Where we are in the process; Public outreach Sherriff's Office Captain Esposito opened the meeting; explained the purpose of the meeting and participation expectations presented Tetra Tech shared status of the planning process; public outreach and engagement status, including the Essex County Senior Event on 9/24, and the current results of the citizen survey (as of 9/16/19).	N/A
2	**Risk Assessment Overview** Purpose of the risk assessment is to determine vulnerabilities and then establish ways to reduce risk. Tetra Tech directed attendees to refer to each jurisdiction's unique packet with each community's draft risk assessment results. Tetra Tech addressed members of the public attending the meeting to also provide input. Tetra Tech presented on the draft risk assessment results for the 2020 HMP with emphasis on the flood hazard. Tetra Tech is collaborating with NJTPA to obtain their climate change data to be integrated into the risk assessment. Tetra Tech presented the number of critical facilities and lifelines located in the floodplain and informed the attendees that each critical facility exposed needs an action to mitigate or	

	description of mitigation measures that have already been taken as per NJOEM – Mitigation Unit guidance. Communities should consider the number of buildings in the floodplain versus number of policies and consider actions to reduce increase insurance. Communities should examine the repetitive and severe repetitive loss properties and include an action to address. Attendee inquired if private insurance holders are represented in the numbers, but they are not. The results presented only include NFIP-insured properties.	
3	**Hazard Ranking** Tetra Tech introduced the hazard ranking process and provided each community the hazard ranking from the 2015 HMP and the draft hazard ranking for the 2020 HMP utilizing the updated hazard ranking formula approved by the Steering Committee. The 2020 HMP hazard ranking includes additional components (Adaptive Capacity and Climate Change). Tetra Tech presentd the following: • Revised methodology presented • Draft County hazard ranking presented; Changes/approval of County hazard ranking o Attendees addressed concerns that Low ranking for Wildfire is too low due to lack of strong, countywide capabilities and lack of portable water supplies. Potential for stronger mutual aid agreements. Meeting attendees determined that the countywide Wildfire should remain a Medium and individual communities can change their own ranking as their see fit. o Attendee addressed concern that Terrorism could be raised from Low to Medium or High. Looking at the proximity to New York City and potential high target areas in various communities (including Prudential Center and Newark Airport), the risk is high. Communities can determine lower or higher ranking for themselves based on their communities' assets. Meeting attendees concluded the countywide Terrorism hazard should remain High. • Municipal hazard ranking exercise	

	○ Attendees instructed to complete the Hazard Ranking Worksheet: 1) Review the 2015 hazard ranking and the draft 2020 hazard rankings calculated utilizing the updated formula and risk assessment results; 2) Provide input on the adaptive capacity for each hazard; 3) Determine the hazard ranking and note why it may differ from the calculated draft hazard ranking ○ Meeting attendees were encouraged to review the large-scale poster maps in the room that display the 2015 and 2020 draft hazard rankings by municipality • Meeting attendees discussed the increased concern over water service interruption and how this can be expanded upon in the updated plan. Tetra Tech will make a recommendation on how to integrate, likely to expand the Power Failure hazard to be Utility Interruption.	
4	**SWOO (Strengths, Weaknesses, Obstacles and Opportunities)** *related to limiting impact of Highly-Ranked Hazards of Concern* Tetra Tech provided an overview of SWOO based on 2015 plan, risk assessment results and capability assessment results. Tetra Tech led a detailed group discussion for flood and explained that communities should be looking at more than just riverine (urban, stormwater, etc.). Attendees instructed to fill out SWOO sheet for hazards they ranked High. Additional discussion led for extreme temperatures.	
5	**Development of Hazard Problem Statements** Tetra Tech reviewed problem statement development with meeting attendees. These need to drive each community's mitigation strategies. These include areas of urban/stormwater flooding that need to be identified – update large-scale map in room if input not provided to date. Tetra Tech provided examples of problem statements that can be used as a guide for each community to develop statements. Communities will work with their Tetra Tech representative and at the October 24th meeting to develop statements and their mitigation strategies.	

6	**FEMA 2019 Hazard Mitigation Assistance Funding Opportunity** Discussed opportunity and upcoming webinar	
7	**Next Steps** • September 26 Webinar to learn more about FEMA FY19 funding • Second annex meeting with Tetra Tech representative needed by October 19th • October 24 Meeting for Steering Committee and Municipalities – 10am, Essex County EOC • Finalize Annexes – opportunity to stay after 10/24 meeting to complete o Annex Review Sign Off sheets required to be filled out as well. • Focus Group Sessions with Stakeholders 11/14 – communities are invited to attend. • Draft Plan for Public Review – December 2019	
8	**General Discussion/Q & A**	

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Steering Committee and Plan Participant Risk Assessment Meeting
MEETING DATE: September 19, 2019

Name	Title	Agency/Municipality	Phone Number	Email
Marty Lutz	OEM Coor.	Belleville	973 208-1355	MLutz@Belleville FireDept.org
Adam Lochner	Admin	South Orange	973-378-7715	alochner@southorange.org
CHRN Bendy	Dem Coor	MICCBERU	973-564-7055	CBendy@MICCBERU.org
Natasha Ortiz	EO OEM	East Orange	973-266-5357	natasha.ortiz@eastorange.nj.gov
David Williams	Eo Dep. Coord.	East orange	973-266-5351	Davidwilliams@eastorange.gov
Robert Echavarria	Dep./Chief	Millburn	973-564-7040	Rechavarria@millburn.org
Chris Mullen	Fire Chief/OEM	Livingston Twp	(973)992-2373	Cmullen@livingstonnj.org
John Herrmann	Fire Chief/Dep. OEM	Montclair	973-509-4760	jherrmann@montclairnjusa.org
John MATHEIS	OEM/COORD	ROSELAND	973-403-6840	JMATHEIS@ROSELANDNJ.ORG
Christopher Critchett	DPW Asst Supt	Roseland	973 226 6565	CCritchett@roselandnj.org
John DASCENSO	EMC	NO. CALDWELL	973-477-0051	JDERIT@GMAIL.COM
Jeff McElroy	CG OEM	cedar Grove	973-239-4100	jmcelroy@cedargrovenj.org
Joel Martin	Verona OEM	Verona	973 239 5000	Joel.martin@veronanj.org

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Steering Committee and Plan Participant Risk Assessment Meeting
MEETING DATE: September 19, 2019

Name	Title	Agency/Municipality	Phone Number	E-mail
Larry Peter	OEM	West Caldwell	973-747-9946	LPeter@westcaldwell.com
GARY GARGITANO	IF PUBLIC HEALTH EMERGENCY COORD	ESSEX REGIONAL HEALTH	9734452460	GGARGITANO@ESSEXREGIONAL.ORG
Jim Egan	Director OEM	Essex Fells	973 578 3011	JIMFEGAN103@GMAIL.COM
Jose B. Torres	Essex OEM	Essex County Sheriff	973-461-9480	jtorres@essexsheriff.com
Brian Maclay	Caldwell OEM	Caldwell OEM	973-570-7276	fireinspector@caldwell-nj.com
Lauren Agnew	County Exec Public Info officer	County Exec	973-621-598	lshears@admin.essexcountynj.org
Anthony Puglisi	Public Info Director	County Exec office	973-621-2542	apuglisi@admin.essexcountynj.org
Amie Jones	ESSEX OEM	ESSEX COUNTY SHERIFF	973.814.0996	AJones@ESSEXSHERIFF.com
John Wiggins	~~Township Emg.~~	Irvington	973-399-6696	Jwiggins@irvingtonnj.org
Lt. Outerbridge	Fire Dept	Irvington	973-399-6656	
Marty Lutz	OEM / Fire	Bloomfield	973-202-1355	MLUTZ@BLOOMFIELDFIREDEPT.ORG
Stephanie Kra	Deputy Essex County	County	973-324-9156	SKRAE@ESSEXSHERIFF.COM
DAN SHELLEY	WOFD DC OEM	WEST ORANGE	9738093767	DSHELLEY@WESTORANGE.ORG

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Steering Committee and Plan Participant Risk Assessment Meeting
MEETING DATE: September 19, 2019

Name	Title	Agency/Municipality	Phone Number	Email
SALVATORE FERRARO	Emg. Coord.	Nutley	973-284-4958	sferraro@Nutleynj.org
Ryan Peter	Sheriffs Officer	Essex County	973 6321779	RPeter@essexsheriff.com
Michael Rokal	Glen Ridge	Adm./Engr	973-748-03[illegible]	[illegible]
ELVIN PADILLA JR	FIRE OFFICE	ORANGE	973 747 9332	epadillaj1@orangenj.gov
Tanya Frazier	Newark OEM	Newark	973-877-9259	frazierta@ci.newark.nj.us
MARK GUILIANO	FIRE OFFICIAL	CAZ DWRC	973 403 4629	FIRE OFFICIAL @CAZDWRC-NJ.com
BRIAN NICOE	DEPUTY CHIEF	MONTCLAIR FIRE/OEM	(973) 715-8076	BNICOEE MONTCLAIRNJUSA.ORG
J. Deluca	Chief of Police	Maplewood	973-761-7901	JDeluca@twp.maplewood.NJ.US
Fitzgerald Figliuolo	Undersheriff	ECSO	973-621-4529	Ffigliuolo@essexsheriff.com
William Cassidy	OEM Coordinator	Nutley	973 5769802	wcassidy@nutleynj.org
William Smith	OEM Coordinator	Fairfield	973-882-2740	wsmith@fairfieldnj.org
DOROTHY LANDRUM	OEM ADMIN	ESSEX County	973-324-950	dlandrum@essexsheriff.com
ED ESPOSITO	CAPTAIN	ESSEX SHERIFF	324-7750	[illegible]

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
MEETING DATE:-September 19, 2019
TOPIC:

Name	Title	Agency/Municipality	Phone Number	Email
R Davidwilliams	Dep Emc	City of East Orange	973-677-8924	david.williams@eastorange-nj.gov
ELVIN PADILLA JR.	DEPUTY COORD.	ORANGE	973 747 9332	epadillajr@orangeNJ.gov
Natasha Ortiz	OEM Assistant	East Orange	862-220-2677	natasha.ortiz@eastorange-nj.gov
Tanya Fraser	Domestic Preparedness Planner	Newark	973-577-9259	fraserta.eci.newark.nj.us

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Essex Sr Wellness Day
MEETING DATE: 9/24/19

Name	Municipality
Lillie Mae Holman	Bldl
Martha Brown	E. Orange
May Barner	E. Orange
Edna DeLeya	
Carol Campbell	W. Orange
Shirley Threwe	Irvington
Geri Thomas	East Orange
Evelyn Roper	Newark
Brant Tyndall	Irvington
Myrtle Hopkins	Newark
Connie Walker	Newark
Wilma Edwards	Wilma Edwards
Dorothy Foye	East orange NJ

Name	Municipality
Cecilia Hunter	Nutley, N.J.
J. Mathews	E.O. NJ
Susan Schuster	W. Orange
Irma Andrews	East Orange
Doretha Wilson	Newark
Lucille Johnson	Hillside
Phyllis Magsano	Hillside
Mr Kilpatrick	East Orange
Dale Bennett	Orange NJ 07050
Sheilah Davis	Newark NJ 07108
	Essex

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Essex Sr Wellness Day
MEETING DATE: 9/24/19

Name	Municipality
Rebecca Baynes	
Mary Simmons	Irvington, NJ 07111
Ethel Scott	Livingston
John Scott	Livingston
Joyce White	Newark NJ
Burma M. Myles	Newark NJ.
Betty McLeod	Orange, NJ
Anna Mason	Orange N.J.
Lewis Moore	E.O. N.J. 07017
Rosie Beasley	Newark, Nj. 07108
Willie Jenkins	Newark NJ
Hattie Roberts	Newark 07103
Diane Smith	Newark 07112

Name	Municipality
Annie Bryan	
Connie Porter	Newark, 07107
Rose Potts	West Orange
Roger Roberts	West orange
Clara O. Scabb	Newark 07107
Violet Williams	Essex
Marilyn Vitello	West Orange
Denise Jackson	So Orange
Lois Scott	South Ward
Carol Hutchins	North ward
Lillie Williams	Newark 45 Sixth

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Essex Sr. Wellness Day
MEETING DATE: 9/24/19

Name	Municipality
Linda Lane	NWK NJ. 07103
M. M. Anderson	Nutley NJ 07110
Dena Chester	Nwk NJ 07108
Doris Golson	E.O. NJ 07018
Alicia Ruiz Ford	[illegible]
Victoria Leone	Glen Ridge
Scott Leone	" "
Catherine Johnson	Irvington
Norma Canty	FHA
Doris Smith	Orange.
Catherine Joyce	E. Orange 07017
Tina Ervin	Newark
Beverly Harrison	Orange

Name	Municipality
Selia Fillmore	Orange
Donna Robers	Newark
Corine Scott	Essex
Cynthia Perry	Essex
Lana Marl	Essex
Steve [illegible]	Essex
Myrtle Perry	Essex
B. Pipkin	Essex
Melinda Artis	Essex
Susan Beatty	Essex

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Essex Sr Wellness Day
MEETING DATE: 9/24/19

Name	Municipality
Valerie Goldfuey	Irvington NJ 07111
ANTOINETTE K THELNTON	NEWARK, NJ 07108
Bernice Johnson	Orange NJ
Joan Spivey	Montclair
Courtland Barth	Montclair
Margaret Russell	Montclair
Gloria Santos	E. Orange
Barb Tarker	Orange
Sharon Miller	Essex
M Hicks	Millburn
R. Suess	E O.
P Ready	Bloomfield
Henry Mitchell	Irvington
Barbara Ingalls	Essex

Name	Municipality
Manuela Rosa	Newark NJ
LARAINE DANIELS	IRVINGTON
JAY Joshi	Verona
Beverly Bagger	East Orange
Howard Barner	East Orange
Rosemary Williams	Newark
Blumgale	Newark
Frank Talbot	East Orange
G Webb	Irv. NJ
Karen Williams	East Orange, NJ
CERALD BENTLY	MAPLEWOOD

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: County Senior Wellness Day
MEETING DATE: 9/24/19

Name	Municipality
Pamela Ringer	Newark
Joslyn White	Newark
Joan Alexander	Newark
Edna Melo	Irvington N.J.
ROCHELLE JOHNSON	IRVINGTON, N.J.
Fay Miller	Irvington NJ
MARCIA WASHINGTON	IRVINGTON, NJ
Kathy White	NEWARK N.J. 07103
Mary Young	Orange, N.J.
Zahidah Allie	Newark
Jennifer Moore	Newark
Debra Jones	Newark
[illegible]	Newark
[illegible]	Newark
Margie Peters	Belleville

Name	Municipality
Marie Randolph	Bloomfield
Victoria Montague	Newark
Angela Cabbagg	Newark
Yvette DaSilva	
Raymond Jones	
Viola Canty	Bloomfield.
Henry Tyson	Irvington NJ
Elaine McElroy	Newark NJ
Angela Tomlin	Newark
Conway Clark	Newark
Florentyna de Graca	Belleville
Tiana Nichols	Essex
Anita Rockett	Essex

Essex Co

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC:
MEETING DATE:

Name	Municipality
Elsie Beatty	E.O.
Valerie Estelle	EO
Annie Etchison	Orange
Glendina Lewis	Irvington
Natalie Jefferson	EO
Faytina Ferguson	EO
Jacklyn	Newark
	Newark
Eula Haynes	Orange
Evia P	Newark
Marjorie Sutherland-EO	
Eugene Enos	Irvington
Kevin Randolph	Newark

Name	Municipality
Margaret Johnson	Newark
Sheron Caldwell	Newark
Connie Gadson	Newark
Marie Veix	Newark
Kate Charles	Irvington
Naomi Bynum	Newark
Ermine Lynch	Orange
MARGO TROUPE	Newark
Lois Stewart	Newark
Barbara Woodward	Newark
Ronald Eitts	Newark
Leslie Miranda	Newark
LATOYA HAYES	ORANGE

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Essex Sr Day
MEETING DATE: 9/24/19

Name	Municipality
Alisa Benson	South Orange
Zena Harrison	South Orange

Name	Municipality

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Essex Sr Day
MEETING DATE: 9/24/19

Name	Municipality
Shuwanna McGreene	E.O.
Check	Irvington
Alice L. Lang	EO/NWK

Name	Municipality

Sign-In Sheet

FEMA Region II – Risk MAP Project
Coastal Restudy Meeting – Essex & Hudson Counties
September 23, 2019

FEMA

Name	Affiliation: Community or Organization	Phone	Email
Dorian Herrell	Newark OEM	201-259-6831	herrelldc@NewarkNJ.us
Kevin O'Sullivan	N. Caldwell	201-306-3551	kosullivan@northcaldwell.org
Corey Lombardi	Essex County OHSEP	973 655 0200	clombardi@essexhsd.com
Alison Miskuman	TetraTech	973-630-8045	alison.miskeman@tetratech.com
Giovanni Ahmad	Weehawken-Hudson	201-319-6005	gahmad@TOW-NJ.NET
ANN HOLTZMAN	HOBOKEN	201-420-2000 x 3100	AHOLTZMAN@HOBOKENNJ.GOV
Bob Smith	Keeney	856-889-2624	
BOB McLaughlin	WEST CALDWELL	973 226-2302	BMclaughlin@WESTCALDWELL.com
Jim Woods	NJC OEM	201.369.5200	jwoods@hcnj.us

Sign-In Sheet

FEMA Region II – Risk MAP Project
Coastal Restudy Meeting – Essex & Hudson Counties
September 23, 2019

FEMA

Name	Affiliation: Community or Organization	Phone	Email
Peter Nevins	N.C.O.E.M.	201-369-5200	pnevins@hcnj.us
George Johns	HCOEM	201-369-5200	gjohns@hcnj.us
THOMAS SONG	FEMA	917-374-5475	THOMAS.SONG@FEMA.DHS
JOSEPH RUGGERI	NJDEP	609 292 2296	joseph.ruggeri@dep.nj.gov
BRIAN CAUFIELD	COMPASS	617-999-9068	caufieldba@cdmsmith.com
TREVOR CONE	RSC		TREVOR.CONE@STANTEC.COM
ROSEMARY BOLICH	STARR II	646-490-3848	ROSEMARY.BOLICH@STANTEC.COM
SALVATORE FERRARO	Nutley	973-284-4958	sferraro@nutleynj.org
Jennifer Modi	Secaucus	201-615-0532	Jmodi@secaucus
T. HERITY	BELLEVILLE	732-261-7934	therity@thaserconsulting.net
RAY MEYER	JERSEY CITY	551-256-2520	RaymondM@ESRI.UK

Sign-In Sheet

FEMA Region II – Risk MAP Project
Coastal Restudy Meeting – Essex & Hudson Counties
September 23, 2019

FEMA

Name	Affiliation: Community or Organization	Phone	Email
Zografo Ballas	Town of Secaucus	201-330-2027	fballas@secaucus.net
Carl Leppin	Town of Secaucus	201-330-2027	Cleppin@Secaucus.net
Francesca Graziano	HC Planning	201-217-5137	fgiarratana@hcnj.us
Joseph Severini	Jersey City Bldg Dept	201-547-5020	josephs@jcnj.org
HAROLD STAHL	HARRISON	973-204-2178	HSTahl@Town of Harrison-com
Valerie Costagna	Hudson County - NV Boswell Engineering	9374164368	VCostania@boswellengineering.com
Mario Bordon	Union City	201-240-9524	UCNJOEM@UCNJ.com
W KIERCE	Jersey City OEMHS	201 547 5681	WKIERCE@NJJCPS.ORG
Suzanne Mack	Bayonne	201 858. 6138	bayonneplanner@gmail.com
Rob Thomas	Newark	973 733 8521	thomasro@ci.newark.nj.us
Rocco Russomanno	HARRISON	973 268 2446	rrussomanno@townofharrison.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Jurisdictional Annex Meeting
MEETING DATE: ~~DATE~~ 10/17/19 @ 1pm

Name	Title	Agency/Municipality	Phone Number	Email
E. ESPOSITO	CAPTAIN	ECSO	973-324-9750	EESPOSITO@ESSEXSHERIFF.COM
Ryan Peter	Sheriff's Officer	ECSO	973-632-1779	RPeter@essexsheriff.com
Michael Capodanno	ESSEX Sheriff SGT	ECSO	201-207-4346	mcapodanno@essexsheriff.com
DAVID ANTONIO	Essex County Planner	EEDPW	973-390-0821	DANTONIO@ESSEXCOUNTYNJ.ORG
S. VARGHESE	ESSEX	"	973-226-8500	SVARGHESE@ "
Luis Rodriguez	Assistant County Engineer	EC-DPW	973-226-8500 x2650	LRodriguez@essexcountynj.org

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Steering Committee Meeting
October 24, 2019 at 9:30am

Welcome and Opening Remarks

Project Status

Finalize Plan Goals

Discuss Plan Maintenance

Stakeholder Focus Group Sessions

Next Steps

- *Mitigation Strategy Workshop – following this meeting*
- *Finalize Annexes – due November 8*
- *Focus Group Sessions – November 14 at EOC*
    - *9-10:30am - Utilities*
    - *12:30-2:00pm - Transportation*
    - *3-4:00pm - Green Infrastructure/Climate Change*

General Discussion/Q & A

Wrap-up

Project Contact Information:
Alison Miskiman (Tetra Tech), 973-630-8045; alison.miskiman@tetratech.com

ESSEX COUNTY HAZARD MITIGATION PLAN –2020 UPDATE
TOPIC: Steering Committee Meeting
DATE: October 24, 2019
**** Essex County may take pictures during the meeting and include in the public plan.***

Name	Jurisdiction/Title	Email	Phone Number	Photo Release (Y/N)
NICHOLAS BREINER	BELLEVILLE / DEP. OEM COOR.	NBREINER@BELLEVILLENJ.ORG	973-930-6024	Y
Ed Esposito	Essex OEM	Esposito@essexsheriff.com	973-809-2895	
Robert Echavarria	Millburn	rechavarria@millburntwp.net	973-564-7040	
Ryan Peter	Essex OEM	RPeter@essexsher.ff.com	973-632-1779	
Paul J. Kittner Jr.	Maplewood Twp Engineer	engineer@twp.maplewood.nj.us	973-762-8120 x3300	
Fitz Figliuolo	ECSO	ffigliuolo@essexsheriff.com	973-809-2897	
John Gonçalves	ECSO	JGonçalves@EssexSheriff	201-407-5750 973-601-4134	
Alison Miskiman	TetraTech	alison.miskiman@tetratech.com	973-630-8045	

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Steering Committee Meeting Notes: October 24, 2019

Meeting Notes

Plan Maintenance – approved by Steering Committee

Stakeholder Focus Group Sessions – workshop format and logistics discussed

2015 Mission Statement	Mission Statement Evaluation (Keep as is? Change?)
Through strategic planning, partnerships and collaboration, identify and reduce the vulnerability to natural and human caused hazards in order to protect the health, safety, quality of life, environment, and economy of all people and all communities within Essex County.	*Update:* Through strategic planning, partnerships and collaboration, identify and reduce the vulnerability *and increase the resiliency to the current and future effects of* natural and human caused hazards in order to protect the health, safety, quality of life, environment, and economy of all people and all communities within Essex County.

2015 Goal	Goal Evaluation (Keep? Change?)	2015 Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
Goal 1: Protect life	*Keep*	1.1: Improve warning and emergency communications systems	*Keep*
		1.2: Reduce the impacts of hazards on people, property, and vulnerable populations.	*Keep*
		1.3: Strengthen County and local planning, building codes, ordinances and enforcement	*Update:* *Integrate the hazard mitigation plan into existing county and local planning, building, codes, ordinances, and enforcement.*
Goal 2: Protect property	*Keep*	2.1: Protect critical facilities	*Update:* Protect *and increase resilience of* critical facilities *and lifelines to reduce disruption of essential activities during and after a hazard event.*

2015 Goal	Goal Evaluation (Keep? Change?)	2015 Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
		2.2: Reduce repetitive and severe repetitive losses	*Keep*
		2.3: Protect environmental resources that serve a natural hazard mitigation function	*Keep*
		2.4: Encourage cost-effective and environmentally-sound development and land use	*Update:* Encourage cost-effective and environmentally-sound development and land use *by incorporating green infrastructure*
<u>Goal 3:</u> **Increase public preparedness and awareness**	*Keep*	3.1: Improve public awareness of hazards and the risks they pose	*Update:* *3.1 Enhance and implement public education and outreach programs to increase awareness of hazard risks*
		3.2: Improve hazard information databases and maps and increase accessibility to those resources	*Keep*
		3.3: Enhance stakeholder education and training	*Update:* *3.3 Provide stakeholder training on mitigation and resilience-related topics to support the identification and implementation of projects and access to funding*
			NEW: *3.4 Improve education of public officials, stakeholders, and the general public regarding the impacts of future conditions, sea level rise, and climate change on people, property, transportation assets, and the economy.*
Goal 4: **Develop and maintain an understanding of risks from hazards**	*Update:* *Increase the understanding and awareness of risks from hazards*	4.1: Review and incorporate updated hazard data into the County Hazard Mitigation Plan and other county and local planning mechanisms	*Keep*
		4.2: Increase support for the development of local mitigation planning and projects	*Keep*
		4.3: Incorporate new State and FEMA guidance, rules and regulations into the Plan	*Keep*

2015 Goal	Goal Evaluation (Keep? Change?)	2015 Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
			NEW: *4.4 Strengthen understanding of, and adaptation to, a changing climate*
Goal 5: **Enhance County and local mitigation capabilities to reduce hazard vulnerabilities**	*Keep*	5.1: Monitor the progress of on-going mitigation activities within the county	*Update:* *5.1 Implement and monitor* the progress of on-going mitigation activities within the county
		5.2: Encourage and support additional related training and education of public officials	*Keep*
		5.3: Encourage the formation of partnerships to leverage and share mitigation resources	*Keep*
		5.4: Integrate the County Hazard Mitigation Plan with other County, regional and local planning initiatives	*Keep*
Goal 6: Support continuity of operations pre-, during and post-hazard events	*Keep*	6.1: Ensure continuity of operations of essential county government services	*Update:* 6.1: Ensure continuity of operations of essential county government services *through training, planning and implementation of mitigation strategies*
		6.2: Increase resiliency by facilitating rapid disaster recovery	*Update:* 6.2: Increase resiliency by facilitating rapid disaster recovery *ensuring that post-disaster efforts incorporate mitigation and adaptation strategies to minimize future losses*.
		6.3: Support and encourage the implementation of alternative energy sources	*Update:* 6.3: Support and encourage the implementation of alternative *and sustainable* energy sources

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Mitigation Strategy Workshop with Planning Partnership
October 24, 2019 at 10:00am

Welcome and Opening Remarks

Project Status

Overview – Developing Mitigation Strategies

Breakout Working Groups to Develop Mitigation Strategies

- Review, Refine, Revise Problem Statements
- Consider Options
- Select Best Choice – write down the specific action selected
- Review Action Worksheet – complete as much as practical today
- Discuss Opportunities for Integrating mitigation into daily operations

Next Steps

- *Finalize Annexes – opportunity to stay after 10/24 meeting to complete*

General Discussion/Q & A

Wrap-up

Project Contact Information:

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ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
TOPIC: Mitigation Strategy Workshop
DATE: October 24, 2019
**** Essex County may take pictures during the meeting and include in the public plan.***

Name	Jurisdiction/Title	Email	Phone Number	Photo Release (Y/N)
NICHOLAS BREINER	BELLEVILLE / DEPUTY OEM	NBREINER @ BELLEVILLE NJ. ORG	973-930-6004	Y
CHRIS GOMY	MILLBURN OEM Coordinator	CGeady@MILLBURNTWP.ORG	973-564-7035	Y
JOHN DASCENZO	CEDAR GROVE / NO. CALDWELL OEM	JDERIT@GMAIL.COM	973-477-0051	Y
Will Cassidy	Nutley / OEM Coordinator	Wcassidy@nutleynj.org	973 590 4812	Y
MARTY LUTZ	Belleville / Coordinator	MLutz@BellevilleFireDept.org	973-202-1355	Y
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JOHN GONCALVES	ECSO	JGONCALVES@ESSEXSHERIFF	973-621-4134 201-407-5750	Y
Salvatore Rendo	Engineer South Orange	svendo@southorange.org	973-378-7715 x7706	Y
SALVATORE FERRARO	Eng. Cand.	sferraro@nutleynj.org	973-284-4958	
ROB BIANCO	MONTCLAIR OEM	rbianco@montclairusa	201-247-9405	Y
John Herrmann	Montclair OEM	jherrmann@montclairnjusa.org	973-809-6302	Y
William Smith	Fairfield OEM	wsmith@fairfieldnj.org	973-445-1550	Y
DAN SHELLEY	WEST ORANGE / OEM	DSHELLEY@[illegible]	9738092[illegible]	Y
Ryan Peter	EssexOEM	RPeter@essexsheriff.com	973-632-1779	Y
Alison Miskuman	TetraTech	alison.miskuman@tetratech.com	973-630-8045	

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
TOPIC: Mitigation Strategy Workshop
DATE: October 24, 2019
**** Essex County may take pictures during the meeting and include in the public plan.***

Name	Jurisdiction/Title	Email	Phone Number	Photo Release (Y/N)
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MARK GUILIANO	CALDWELL	FIREOFFICIALCALDWELL-NJ.COM	973 661 1820	Y
Tony Outerbridge	Irvington Fire	Outerbridge@IrvingtonNJ.org	973 3996563	
Robert Echavarria	Millburn	rechavarria@millburnpd.com	973-564-7037	Y
Sean Quinn	Glen Ridge	SPQuinn@glenridgenj.org	201-306-7554	Y
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Ed Estevez	Essex OEM	EEstevez@essexsheriff.com	862-219-2895	
Dorian Herrell	Newark OEM	herrelld@cinewark.NJ.US	201-259-6521	
Gary Schall	Boro of Roseland	gschall@roselandnj.org	[redacted]	Y
Amir Jones	ECSO	AJones@EssexSheriff.com	973-814-0796	
John Medina	West Caldwell OEM	jmedina@westcaldwell.com	973-226-2302	Y
Brian Wilde	Montclair	BWilde@montclairnjusa.org	(973) 715-5096	Y
Kevin O'Sullivan	N. Caldwell	kosullivan@northcaldwell.org	201-306-3551	

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Essex County Focus Group Sessions: Multimodal Transportation
November 14, 2019 at 12:30pm

Welcome and Introductions

Overview and Intent

Hazard Mitigation Plan Update

Areas of Concern Identified to Date

First Easel Session

- *Identify current capabilities*
- *Identify vulnerabilities*
- *Discussion*

Second Easel Session

- *Identify integration opportunities*
- *Identify potential mitigation actions*
- *Discussion*

Conclusion

Contact Information:
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Cynthia Bianco (Tetra Tech), 973-630-8044; cynthia.bianco@tetratech.com

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Essex County Focus Group Sessions: Utilities
November 14, 2019 at 9:00am

Welcome and Introductions

Overview and Intent

Hazard Mitigation Plan Update

Areas of Concern Identified to Date

First Easel Session

- *Identify current capabilities*
- *Identify vulnerabilities*
- *Discussion*

Second Easel Session

- *Identify integration opportunities*
- *Identify potential mitigation actions*
- *Discussion*

Conclusion

Contact Information:
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ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Essex County Focus Group Sessions:
Green Infrastructure and Climate Change
November 14, 2019 at 3:00pm

Welcome and Introductions

Overview and Intent

Hazard Mitigation Plan Update

Areas of Concern Identified to Date

First Easel Session

- *Identify current capabilities*
- *Identify vulnerabilities*
- *Discussion*

Second Easel Session

- *Identify integration opportunities*
- *Identify potential mitigation actions*
- *Discussion*

Conclusion

Contact Information:
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2020 Essex County
Hazard Mitigation Plan Update
Stakeholder Workshops
November 14, 2019

Schedule: Utilities Workshop: 9:00 – 10:30 am
Transportation Workshop: 12:30 – 2:00 pm
Green Infrastructure and Climate Change Workshop: 3:00 – 4:30 pm

Location: Essex County Office of Emergency Management, 560 Northfield Avenue, West Orange, NJ

Attendees:

Name	***Title***	***Session***
Chris Huch	Planner, Tetra Tech	Utilities, Transportation, Green Infrastructure/Climate Change
Cynthia Addonizio-Bianco	Planner, Tetra Tech	Utilities, Transportation, Green Infrastructure/Climate Change
Stephanie Knox	Detective, Essex County Sherriff's Office	Utilities, Transportation, Green Infrastructure/Climate Change
John D'Ascensio	EMC/County Fire, Cedar Grove OEM	Utilities
Eric Boston	PSE&G Ops OEM	Utilities
Christopher Mullin	OEM Coordinator, Livingston Township	Utilities
William Smith	OEM Coordinator, Fairfield Township	Utilities, Transportation
Rob Thomas	Energy & Environment, Newark	Utilities, Transportation
Eric Holliday	OEM Coordinator, Fairfield	Transportation
Jennifer Duckworth	Essex County Transportation Advisory Board, Essex County Environmental Commission	Transportation, Green Infrastructure/Climate Change
Chris Beady	OEM Coordinator, Millburn Township	Transportation
Bob Glantzberg	Director of Ops, TRANSCOM	Transportation
Fitzgerald Figliuolo	ECSO U/S	Transportation
Brad Mason	Senior Director, New Jersey Transit	Transportation
Amy Rowe	County Agent, Rutgers Cooperative Extension	Green Infrastructure/Climate Change
Sheila Baker Gyriel	Municipal Environmental Specialist, ANJEC	Green Infrastructure/Climate Change
Stephanie Chloe	ECSO	Green Infrastructure/Climate Change
Jason Glemsen	Montclair BID	Green Infrastructure/Climate Change

A summary of the three stakeholder workshops is provided below.

Welcome and Introductions

Chris Huch (Tetra Tech), Cynthia Addonizio-Bianco (Tetra Tech), and Stephanie Knox (Essex County Sherriff's Office) welcomed the participants and thanked them for attending the workshops.

Overview and Intent

Mr. Huch explained the intent of the workshops is to collect valuable stakeholder input to integrate into the 2020 Essex County Hazard Mitigation Plan update. Three separate workshops were being held to gather information for the following sectors: utilities, transportation systems, and green infrastructure/climate change. The goal of each workshop is to identify the following for each sector:

- Capabilities Essex County has that contributes to the reduction of risk such as plans, ordinances, administrations, and projects;
- Problem areas that represent vulnerabilities/gaps/challenges within the County; and
- Potential actions or projects that could be undertaken to increase the County's resilience and decrease the County's risk to future hazard events.

Hazard Mitigation Plan Update

Mr. Huch explained the purpose of the hazard mitigation plan is to profile the various hazards of concern for Essex County and design strategies and projects to mitigate the County and each municipality's risk to the identified hazards of concern. Essex County's Hazard Mitigation Plan is currently undergoing its 5-year update. Tetra Tech has been hired to facilitate the planning process and draft the plan for the County. A draft of the plan is scheduled to be posted for public review in December 2019. The goal is to have the plan approved by FEMA and adopted by all participating jurisdictions in early 2020.

Poster Sessions

Mr. Huch directed attendees to posters depicting Essex County. Attendees were asked to use the maps to identify and discuss the County's capabilities, problem areas, and potential mitigation actions. Tetra Tech staff took notes during these sessions and captured the information identified on maps by attendees. The information from each section is compiled below.

Utilities Focus Group:

Capabilities:

- In past hazard events, municipalities have been able to keep their municipal gas stations open; at times open to the public as well
- PSE&G has the resources to deploy staff and equipment from all over the country to respond to a hazard event in New Jersey; however, this is reliant on the event being well-forecasted to be most effective.

- PSE&G facilities impacted by Sandy have been mitigated and raised/protected to State-mandated levels.
- NJ Metro Strike Team has acquired Hydrotrek vehicles for amphibious emergency response. The Metro Strike Force was formed to provide first response capabilities to a technical rescue scenario.
- PSE&G trims all high-tension line areas regularly and can trim/remove trees on local lines if requested.
- The City of Newark has started their own fiber network for internet services.
- The City of Newark has a lead pipe replacement program available.
- The Newark reservoir in Cedar Grove has recently been fenced. Trees have been removed from the area to prevent from falling limbs damaging the fence.
- Fairfield conducts stream clearing.
- Consistent lines of communication with utility companies have been initiated post-Sandy.
- PSE&G and JCP&L have databases for homes/facilities that have individuals that need power supplied for health reasons.
- Essex County does a good job with snow clearing in winter storm events.

Problem Statements:

- PSE&G needs a list of facilities that have natural gas generators in order to provide continuous supply if a planned outage/shut off option is implemented during hazard events.
- City of Newark: Clay Street CSO outfall is prone to flooding (worsened by high tide flooding).
- City of Newark has a reservoir in Cedar Grove that poses security concerns.
- Unknown if Newark filtering stations for water have capacity to filter out microcystin from HAB's.
- Flooded streets in Newark create a need for boats and high clearance vehicles.
- Tankers are needed for firefighting. Currently reliant on other regions when water supply is limited.
- Riker Hill Park needs additional fire hydrants for firefighting.
- Cell coverage is limited in North Caldwell limiting emergency communications.
- Communication with Passaic Valley Sewerage Authority is difficult. They have a flood wall in place to protect the Newark facility.
- Livingston Township experiences flooding in an industrial area (Dorson Ave, Naylove Ave, Naylon Place) where the Passaic River crests after storms.
- Maplewood: South Mountain Reserve is prone to wildfire.
- Belleville: Issues with broken water mains.
- North Caldwell: Needs additional cell towers to support emergency communications.

Potential Mitigation Actions:

- Fairfield: Developing a grant application with NJ Department of Community Affairs to fund elevation projects.

- Municipalities with power line concerns can identify trees of concern and provide the list to PSE&G for trimming/removal.
- Increase the standards for building codes for stormwater components to reduce flooding in Newark.
- Newark Jackson Street Bridge has a tide gauge hooked into the Stevens Flood Advisory System (NYHOPS). Access and use the water level data from the flood gage to provide flood warning data.
- Livingston: Extend the water main to Riker Hill Park to provide proper fire protection to buildings.
- Livingston: Clear brook/streams to prevent flooding in flood prone areas during heavy rains.
- Livingston: Township-wide drainage study is needed.

Transportation Focus Group:

Capabilities:

- The City of Newark is incorporating green infrastructure into streetscape design.
- The City of Newark is participating in Resilient NJ (RNJ) and has conducted Getting to Resilience (GTR) of the Ironbound, and developed a Strategic Recovery Planning Report (SRPR).
- The City of Newark has built a flood wall at Riverfront Park.
- TRANSCOM has a record of past flooding events that have impacted transportation.
- NJ Transit has a record of past storm events.
- NJ Transit uses a Design Flood Elevation (DFE) of Base Flood Elevation (BFE) plus 2.5 feet in areas of coastal influence.
- NJ Transit has a resiliency website: https://njtransitresilienceprogram.com/
    - Identifies numerous projects and actions
- NJ DOT has established a specific plan for plowing Interstate-280; this roadway has had major winter storm problems in past, partially due to hills. The plan includes a platoon of snow plows, NJ State Police, NJ DOT Safety Service Patrol vehicle, a tow truck and they will be focused on keeping the hilly area of I-280 free of ice/heavy snow to the extent possible. The tow truck is used to simply remove the vehicle off the main roadway and shoulder so the plows can continue to plow and salt/sand.
- Bus and railroads have snow plans in place through NJ Transit, depending on number of inches of snow.
- NJ Transit has emergency plans for each of their 5 railyards: Hoboken, Bayhead, Meadowlands, Rolling Stock, MMCi
- Delco County Yard: new rail facility to be used as a safe-haven location yard with inspection facility to facilitate rolling stock to come on line faster
- Buses are more commonly used for evacuation than trains and are more mobile for evacuation.
- City of Newark: Passaic Tidal Feasibility Study conducted by the City and USACE.

- TRANSCOM has a bridge closure plan for high wind events, starting at tropical storm-force wind speeds. The plan involves 50+ bridges and joint calls with local OEMs and state agencies for events.
- New Jersey has developed additional guidance for travel restrictions for high wind events such as the identification of high profile vehicles that would be banned during high wind events. This includes the use of notifying motorists the anticipated timeline of travel restrictions that may be put in place due to a hazard event.
- New Jersey has established a tool to allow for communication with vehicles that may be stranded during hazard events, first implemented in PA (https://www.penndot.gov/PennDOTWay/Pages/Article.aspx?post=79). An area that is likely to have high hazard impacts is identified. A location-based alert is sent to motorists in that specific region, allowing for communication with emergency staff.

Problem Areas:

- There is a need for better communications between federal, state, and local transportation agencies for coordination and integrated planning for overlapping projects (including resilience projects like Rebuild by Design which could result in changes to traffic patterns)
- NJ Transit had roughly $809 million in damages from Hurricane Sandy
- Millburn has flooding issues at:
    - JFK Parkway (County road) which is a major thoroughfare
    - East and West Branches of Rahway River are prone to flooding
    - Brookside Drive, a cut through to the hospital has flooding issues
        - Also has issues with winter storms; can't properly treat roadways as the brine/salt leads to water quality issues of neighboring waterway
- NJ Transit
    - Headquarters, Penn Station, and subway tunnels are flood prone.
    - Lost a generator at Penn Station, Newark during Sandy.
    - Vent system for light rail subway is prone to flooding.
    - Maintenance facility in Hudson County which services Essex County has flood access issues.
    - Power flow issue where power runs through a generator at Penn Station, Newark.
    - Areas that flooded during Sandy have power lines and other infrastructure that had salt corrosion problems
- Newark Dock Street Bridge is Amtrak and is a historic bridge and the Newark Portal Bridge drawbridge is an older bridge. Older infrastructure may be more prone to damages. Historical status makes mitigation more challenging.
- City of Newark: Essex County Correctional Facility near Doremus Ave is heavily inundated during flooding events.
- East Orange: Garden State Parkway floods near Route 280 interchange.
- Livingston: Flooding from the Passaic River shuts down Route 10.

Potential Mitigation Actions:

- The City of Newark traffic optimization studies (to be wrapped up in 2020) focus on the Raymond Blvd corridor to optimize safety and flow.
- Essex County is developing a Snow Plow Task Force.
- City of Newark is updating their Stormwater Ordinance within next year
- City of Newark is updating their Flood Damage Prevention Ordinance by April
- City of Newark is working on a feasibility study for stormwater fee (estimate to complete in 2 years)
- Hoboken NJ Transit railyard is filling in their rail station to lift it.
- Ensure coordination to avoid potential traffic issues caused by the upcoming RBD project in Hoboken.

Green Infrastructure and Climate Change Focus Group:

Capabilities:

- Essex County has an Energy Master Plan.
- Essex County has wide areas of open space.
- There are numerous groups completing outreach on green infrastructure and climate change in the County, including the Rutgers Cooperative Extension, Rutgers Water Resources Program, ANJEC
- ANJEC is working statewide on the stormwater utility issue.
- Essex County has a Complete Streets Policy (Circa 2009).
- Essex County has an Invasive Species Management Plan.
- Hilton Branch Library in Maplewood Township has installed a successful rain garden.
- Essex County Environmental Center.

Problem Areas:

- The Essex County Open Space Plan has expired. This holds back the County's ability to complete acquisitions.
- Low funding and low level of education (pubic and municipal officials) on green infrastructure and climate change holds back progress on these issues.
- Montclair has flooding issues at Toney's Brook which runs under a shopping center.
- Bloomfield Avenue in Montclair is flood-prone.
- East Orange VA Hospital has major stormwater issues. While rain gardens have been put in, they have not been effective.
- Invasive species such as emerald ash borer are a major county concern.
- Gulf Island near South Orange's section of the Rahway River floods during heavy rain. The South Orange Fire Station is also at this location and may either be flood prone or isolated by flooding.
- Native pollinators are sensitive to climate change.
- City of Newark is flood prone.

Potential Mitigation Actions:

- Complete Essex County Complete Streets Policy could be updated to include “green streets”.
- Educate decisionmakers on climate change and green infrastructure.

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Transportation Workshop
MEETING DATE: November 14, 2019

Name	Title	Agency/Municipality	Phone Number	Email
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Fitzgerald Figliuolo	ECSO U/S	ECSO	973-809-2897	FFigliuolo@essexsheriff.com
BRAD MASON	SENIOR DIRECTOR	NJT	973 732 8088	BMASON@NJTRANSIT.COM

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Climate Change Green Infrastructure Workshop
MEETING DATE: November 14, 2019

Name	Title	Agency/Municipality	Phone Number	Email
Amy Rowe	County Agent	Rutgers Cooperative Extension	908-235-1160	rowe@njaes.rutgers.edu
Sheila Baker Gyrisk	Municipal Environ Specialist	ANJEC	973-539-7547	sbakergyrisk@anjec.org
Stephanie Chao	Essex County Intern	ECSO/EOES	973-324-905	SYChao@essexcountynj.org
Jason Gleason	Director	Montclair BID	(973) 868 8188	jason@montclairdowntown.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
SIGN-IN SHEET
TOPIC: Utilities Workshop
MEETING DATE: November 14, 2019

Name	Title	Agency/Municipality	Phone Number	Email
John D'Ascenzio	EMC/County Fire	Cedar Grove OEM	973-477-0057	JDEMT@GMAIL.com
Eric Boston	PSE&G Ops	OEM	973-868-0261	eric.boston@pseg.com
William Smith	OEM Coordinator	Fairfield	973-445-1550	wsmith@fairfieldnj.org
Christopher Mullin	OEM Coordinator	Livingston Twp	973 992-2373	Cmullin@livingstonnj.org
Rob Thomas	Energy & Env.	Newark NJ	9737338521	thomasro@ci.newark.nj.us

ESSEX COUNTY HAZARD MITIGATION PLAN - 2020 UPDATE
Steering Committee Meeting
February 4, 2020 at 10:00am

Welcome and Opening Remarks

Project Status

Linkage Procedures

Review Draft Plan Public and Stakeholder Comments

Draft Cover Selection

Plan Maintenance

Next Steps

- *Submit plan to NJOEM for review*
- *Adoption resolutions after FEMA APA is received*
- *BATool[SM] webinar on plan maintenance*

General Discussion/Q & A

Wrap-up

Project Contact Information:

Alison Miskiman (Tetra Tech), 973-630-8045; alison.miskiman@tetratech.com

ESSEX COUNTY HAZARD MITIGATION PLAN – 2020 UPDATE
TOPIC: Steering Committee Meeting
DATE: February 4, 2020

Name	Jurisdiction/Title	Email	Phone Number
Michael Capodanno	Essex Sheriff Sgt	mcapodanno@essexsheriff.com	201-274346
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Larry Taylor	Essex Sheriff / DET	LTaylor@essexsheriff.com	551 655 1889
EO ESPOSITO	ESPOSITO@ESSEX	FILE -	973-621-4111
Robert Echavarria	Millburn Fire	rechavarria@millburntwp.org	973-564-7040
Daryl L. Johnson	Essex Sheriff DET	DJohnson@EssexSheriff	973-803-2386
Stephanie Cinco	Essex County OEM	SCinco@essexsheriff	973-394-9758
Marty Lutz	Belleville F.D.	MLutz@BellevilleFireDept.org	973-202-1355
Alison Miskiman	TetraTech	alison.miskiman@tetratech.com	973-630-8045

APPENDIX D. PUBLIC AND STAKEHOLDER OUTREACH

This appendix provides documentation of public and stakeholder outreach. Stakeholder involvement in this planning process was broad and productive as discussed and further documented in Section 2 (Planning Process). Public and stakeholder input has been incorporated throughout this HMP as appropriate, as identified in Section 2 and the References section, as well as within specific mitigation initiatives identified within the jurisdictional annexes (Section 9).

D.1 CITIZEN SURVEY

This section contains information and results gathered from the Essex County Citizen Survey. The main objective of this survey was to gather information from citizens regarding their level of knowledge regarding hazard vulnerability and knowledge of hazard mitigation information for their local communities. The survey was available on the Essex County Sheriff's website beginning in the summer of 2019. County departments and several municipalities also posted the survey on their websites and social media as shown in the figures below.

A total of 102 respondents completed this survey over a period of six months during the planning process. Respondents primarily consisted of individuals who have lived in Essex County for 20 years or more and live in a single-family home. Survey respondents indicated that flooding was the hazard of greatest concern, followed by severe weather and severe winter storms. Survey respondents identified mitigation projects to reduce the effects of hazards include retrofit infrastructure; improve damage resistance to utilities; enhance stream maintenance; and install and improve protective structures. The Citizen Survey results are included at the end of this appendix.

D.2 PUBLIC MEETINGS

All Planning Partnership meetings were open to the public. Meetings were advertised on the Essex County website as well as through social media posts. One resident attended the September 2019 Risk Assessment Review meeting and submitted input on the countywide hazard ranking and strengths, weaknesses, obstacles and opportunities exercise. This feedback was provided back to the County and municipalities to consider incorporation into the plan.

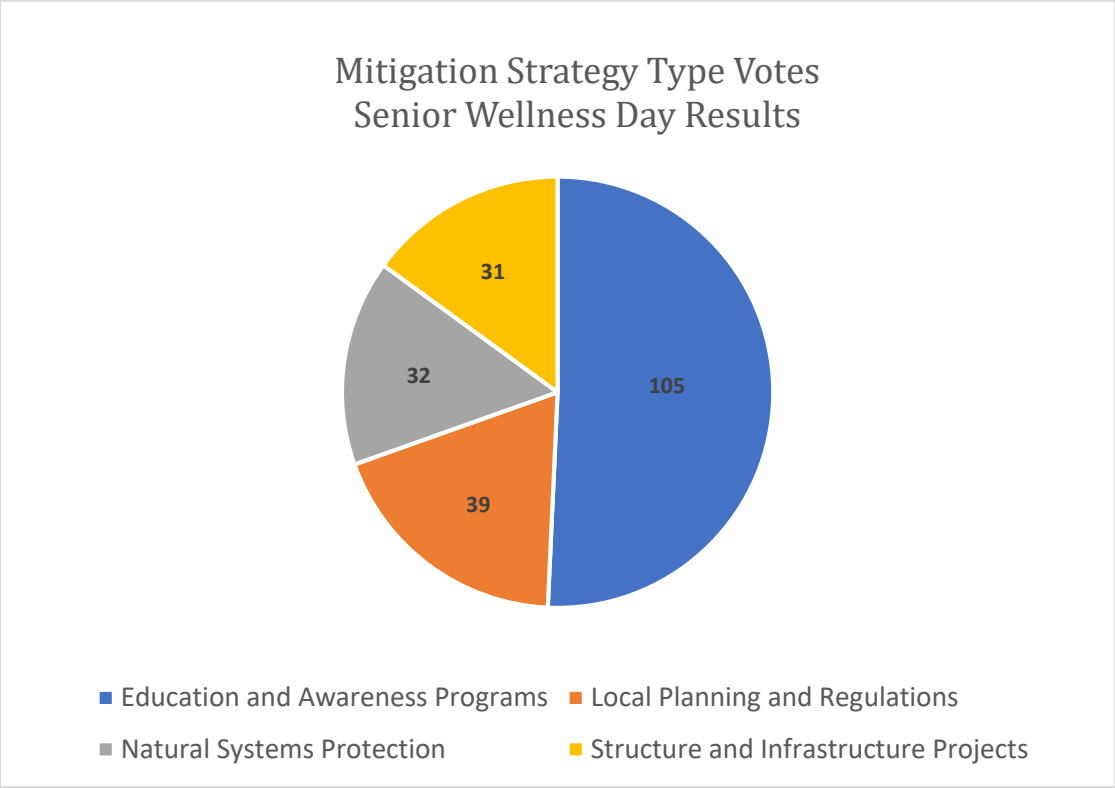
Essex County Sheriff's Office and the planning consultant attended the public event, Senior Wellness Day on September 24, 2020 at the Richard J. Codey Arena. A table was set up to share the plan update process with residents; survey attendees on their preferred mitigation projects in the County; distribute materials including an abbreviated version of the citizen survey (8 questions, available at the end of the Appendix) and multi-lingual brochure. Over 80 residents stopped by the mitigation table as demonstrated on the sign-in sheet in Appendix C. A bi-lingual (English and Spanish) translator also attended to further engage residents.

An interactive mitigation strategy voting exercise was available for residents to take. The planning consultant asked residents what mitigation strategy they preferred implemented to reduce natural hazard risk. Figure D-1 summarizes these results. The majority of residents selected an education and outreach strategy (105 votes) with an even distribution of votes for local planning and regulations (39 votes), natural systems protection (32 votes) and structure and infrastructure projects (31 votes).



Figure D-1. Senior Wellness Day Poster

Figure D-2. Senior Wellness Day Mitigation Strategy Type Survey Results



D.3 STAKEHOLDER WORKSHOPS

Essex County hosted a regional and local stakeholder workshop in November 2019. The invited stakeholders included all Steering Committee members, municipal representatives and stakeholders from transportation, utility and green infrastructure/climate change sectors. Table D-1 summarizes the organizations invited to the workshops. In addition to being asked to the workshops, invited stakeholders were asked to participate in an online survey to provide input on vulnerable assets, capabilities, and current/potential future mitigation projects; and invited to provide input on the draft HMP.

Table D-1. Organizations Invited to the Stakeholder Workshop

Organizations Invited to the Stakeholder Workshop			
New Jersey Future	Verizon	North Jersey Transportation Planning Authority (NJTPA)	Hudson County, New Jersey Office of Emergency Management
NY/NJ Baykeeper	New Jersey American Water	NJ Transit Police	Morris County, New Jersey Office of Emergency Management
Montclair Sustainability Officer	Passaic Valley Sewerage Commission	NJ Transit	Passaic County, New Jersey Office of Emergency Management
Newark Sustainability Officer	Passaic Valley Water Commission	Transportation Operations Coordinating Committee (TRANSCOM)	Union County, New Jersey Office of Emergency Management
Sustainable Essex Alliance	East Orange Water Commission	Port Authority of New York and New Jersey	Somerset County, New Jersey Fire Coordinator
Sustainable Jersey	Newark Water Utility	Together North Jersey	Morris County, New Jersey Fire Coordinator
Master Gardeners of Essex County	Essex Fells Water Company	Essex County Special Transportation System	Union County, New Jersey Fire Coordinator

Organizations Invited to the Stakeholder Workshop			
Essex County Environmental Center	Essex County Utilities Authority	Rutgers University Police Department	Rutgers Cooperative Extension Water Resources Program
Rahway River Watershed Association	PSE&G	New Jersey Institute of Technology Police	Rahway River Watershed Association
New Jersey Institute of Technology	JCP&L	Essex County Transportation Advisory Board	Together North Jersey
Association of NJ Environmental Commissions (ANJEC)	Caldwell Sewage Treatment Plant	Rutgers Police Department	Master Gardeners of Essex County
New Jersey Department of Transportation	Montclair Resilience Officer		

**Steering Committee and Planning Committee members were also invited to the stakeholder workshop; however, they are not listed in this table. Refer to Table 2-2 in Section 2 (Planning Process).*

The goal of each workshop was to identify the following for each sector:

- Capabilities Essex County has that contributes to the reduction of risk such as plans, ordinances, administrations, and projects;
- Problem areas that represent vulnerabilities/gaps/challenges within the County; and
- Potential actions or projects that could be undertaken to increase the County's resilience and decrease the County's risk to future hazard events.

Large-scale poster maps of the County and delineated hazard areas were made available around the room. Participants were asked to visit the poster stations and utilize colored dots to identify vulnerable assets and post-it notes to draft mitigation strategies. After feedback was obtained, the consultant facilitated a dialogue regarding the information collected. Refer to Appendix C (Meeting Documentation) for a summary of the meeting.

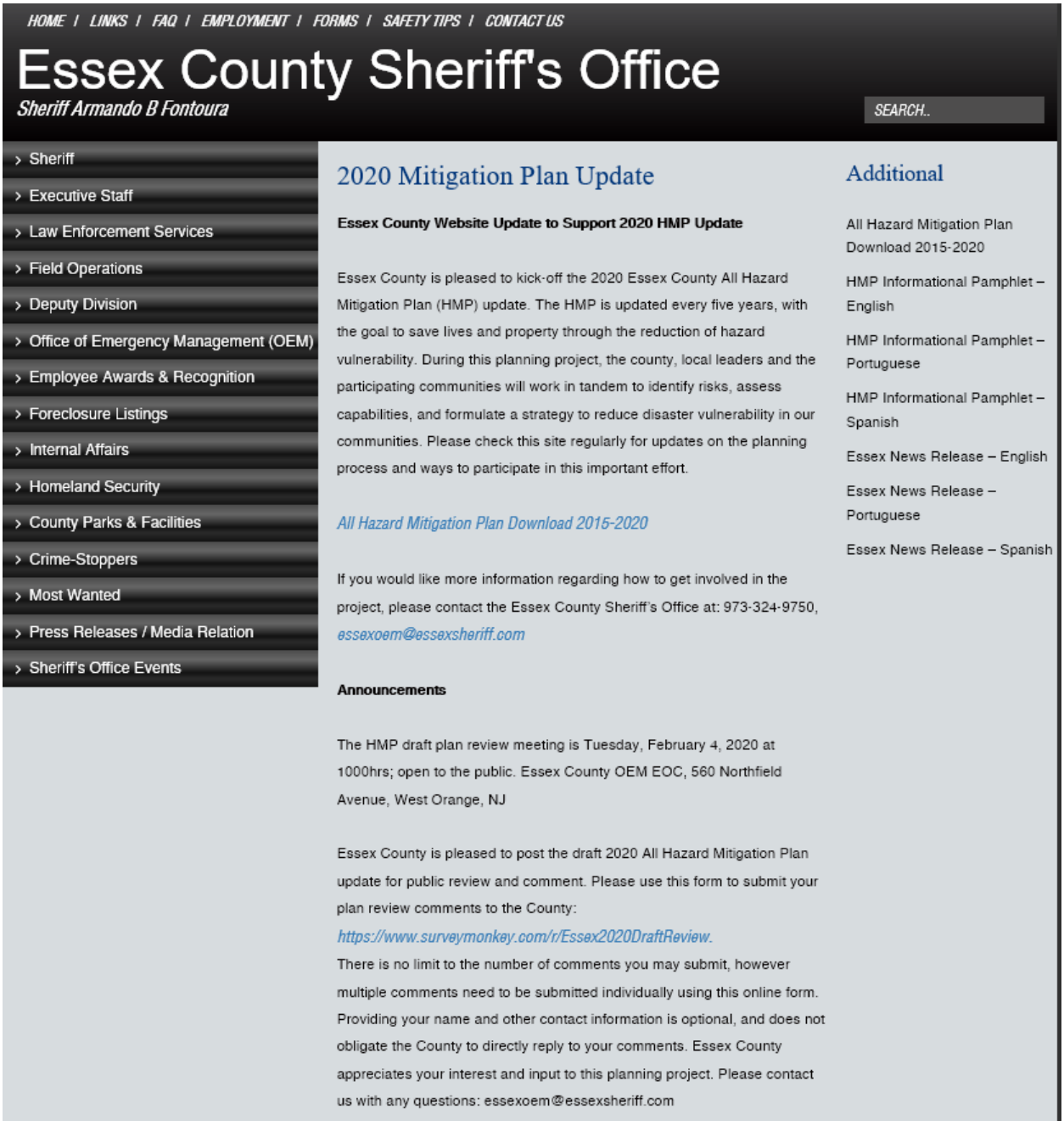


Figure D-3. . Stakeholder Workshop Poster Exercises

D.4 WEBSITES, SOCIAL MEDIA AND NEWS ARTICLES

The following provides screenshots of websites, social media posts, news articles and other forms of public outreach.

Figure D-4. Essex County Sheriff's Office



Essex County is pleased to post the draft 2020 All Hazard Mitigation Plan update for public review and comment. Please use this form to submit your plan review comments to the County:
https://www.surveymonkey.com/r/Essex2020DraftReview.
There is no limit to the number of comments you may submit, however multiple comments need to be submitted individually using this online form. Providing your name and other contact information is optional, and does not obligate the County to directly reply to your comments. Essex County appreciates your interest and input to this planning project. Please contact us with any questions: essexoem@essexsheriff.com

As of the 12/19/19 the draft plan is available for public review and comment. Any comments should be submitted via email to essexoem@essexsheriff.com or by calling our office of emergency management at 973-324-9750.

https://www.essexsheriff.com/essex-2020/

The HMP Risk Assessment meeting is Thursday, September 19, 2019 at 1000hrs; open to the public. Essex County OEM EOC, 560 Northfield Avenue, West Orange, NJ

The HMP Mitigation Strategy meeting is Thursday, October 24, 2019 at 1000hrs; open to the public. Essex County OEM EOC, 560 Northfield Avenue, West Orange, NJ

Citizen Survey - Public participation and feedback is a vital part of the hazard mitigation planning process. Essex County has developed a Citizen Preparedness Survey to assist in providing the public an outlet to contribute to the Essex County Hazard Mitigation Plan update. This survey is anonymous and will be used to develop portions of the plan. Please visit the survey at: https://www.surveymonkey.com/r/essexhmp2020

The Essex County Sheriff's Office Of Emergency Management will be holding the HMP kickoff meeting on Thursday July 18, 2019 at 0900.

Mitigation

Preparedness

Response

Recovery

Figure D-5. Essex County Executive Social Media Posts



Figure D-6. Essex Regional Health Commission Social Media Posts Regarding the HMP Kickoff



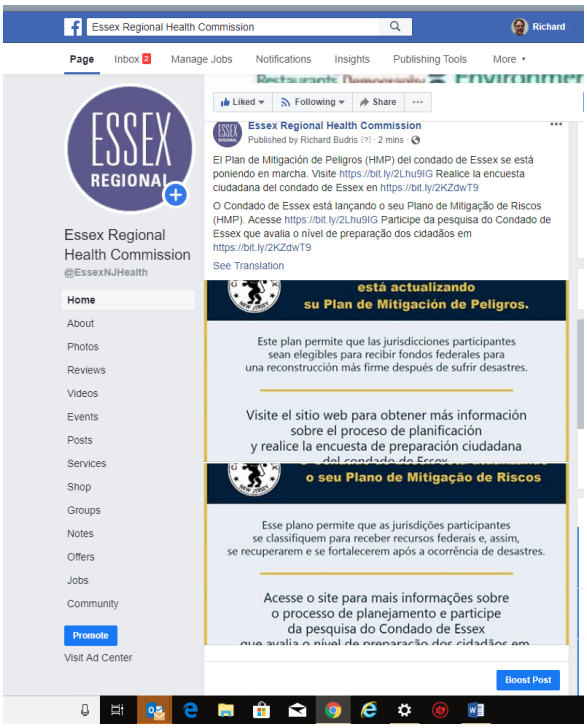


Figure D-7. Township of Belleville Facebook Post Regarding the HMP Kickoff

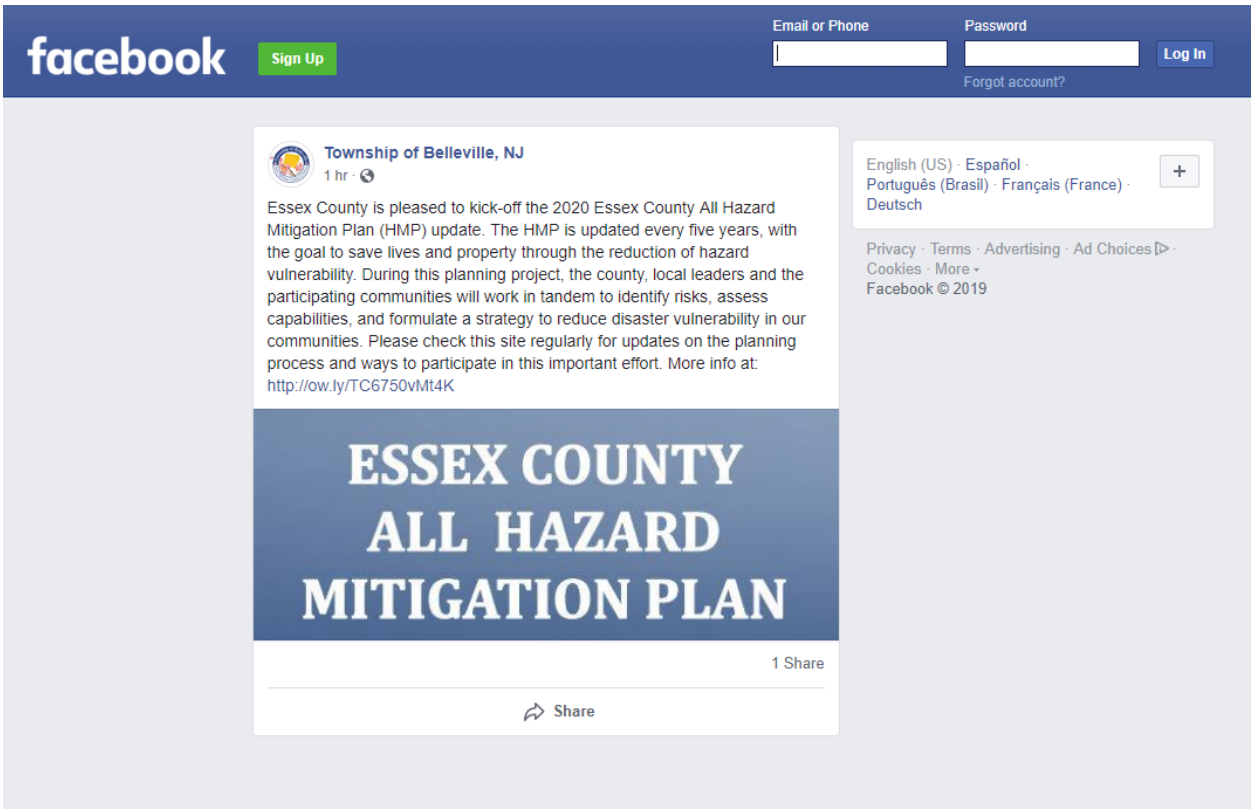
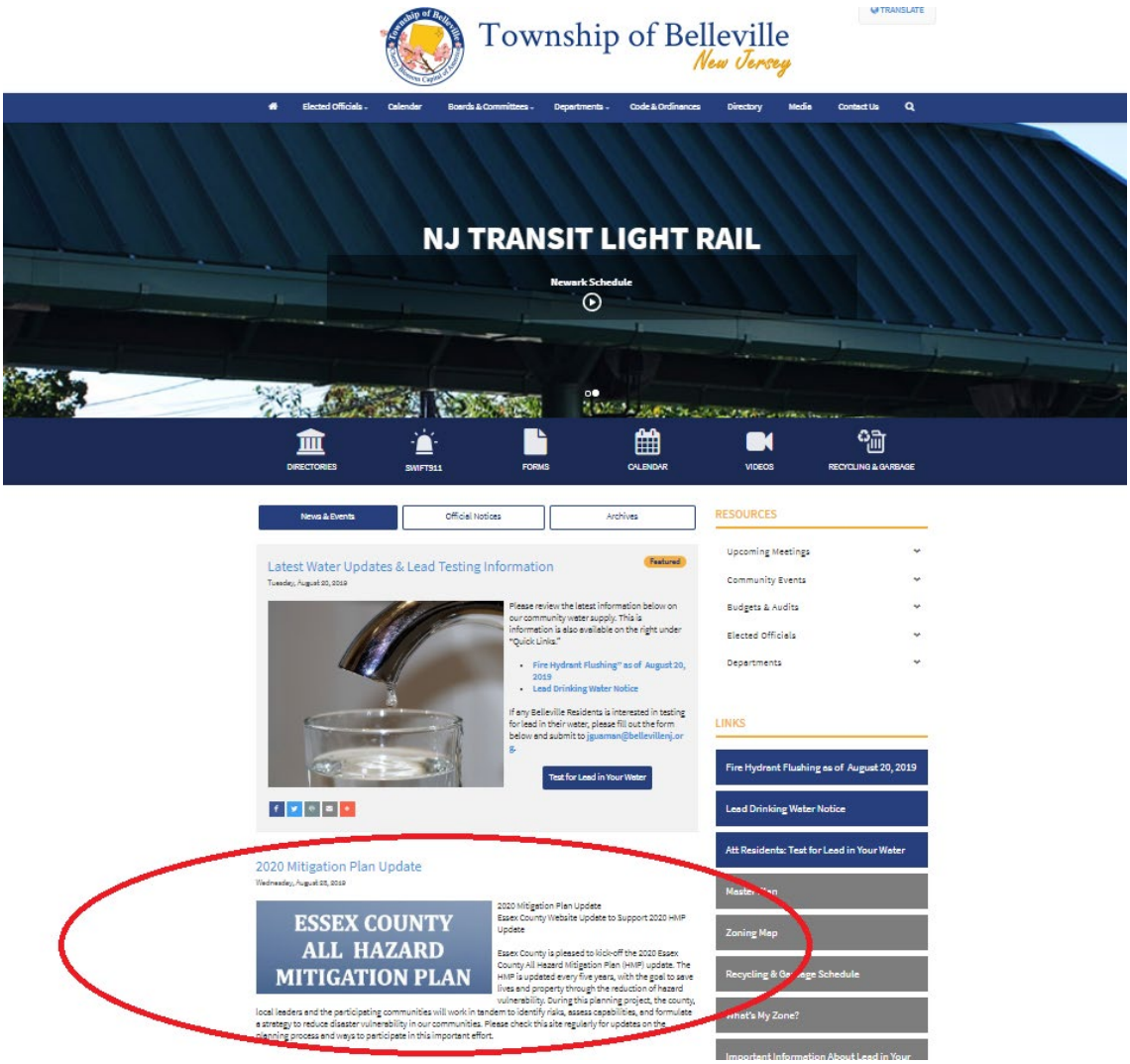


Figure D-8. Township of Belleville Website Post Regarding the HMP Kickoff and Citizen Survey



2020 Mitigation Plan Update

Wednesday, August 28, 2019

ESSEX COUNTY ALL HAZARD MITIGATION PLAN

2020 Mitigation Plan Update
Essex County Website Update to Support 2020 HMP Update

Essex County is pleased to kick-off the 2020 Essex County All Hazard Mitigation Plan (HMP) update. The HMP is updated every five years, with the goal to save lives and property through the reduction of hazard vulnerability. During this planning project, the county, local leaders and the participating communities will work in tandem to identify risks, assess capabilities, and formulate a strategy to reduce disaster vulnerability in our communities. Please check this site regularly for updates on the planning process and ways to participate in this important effort.

Essex County's HMP is kicking off. Visit https://bit.ly/2Lhu9IG Take the Essex County citizen survey at https://bit.ly/2KZdwT9

Figure D-9. Township of Belleville Website Draft HMP Post



Borough of Caldwell Website – Draft HMP Review

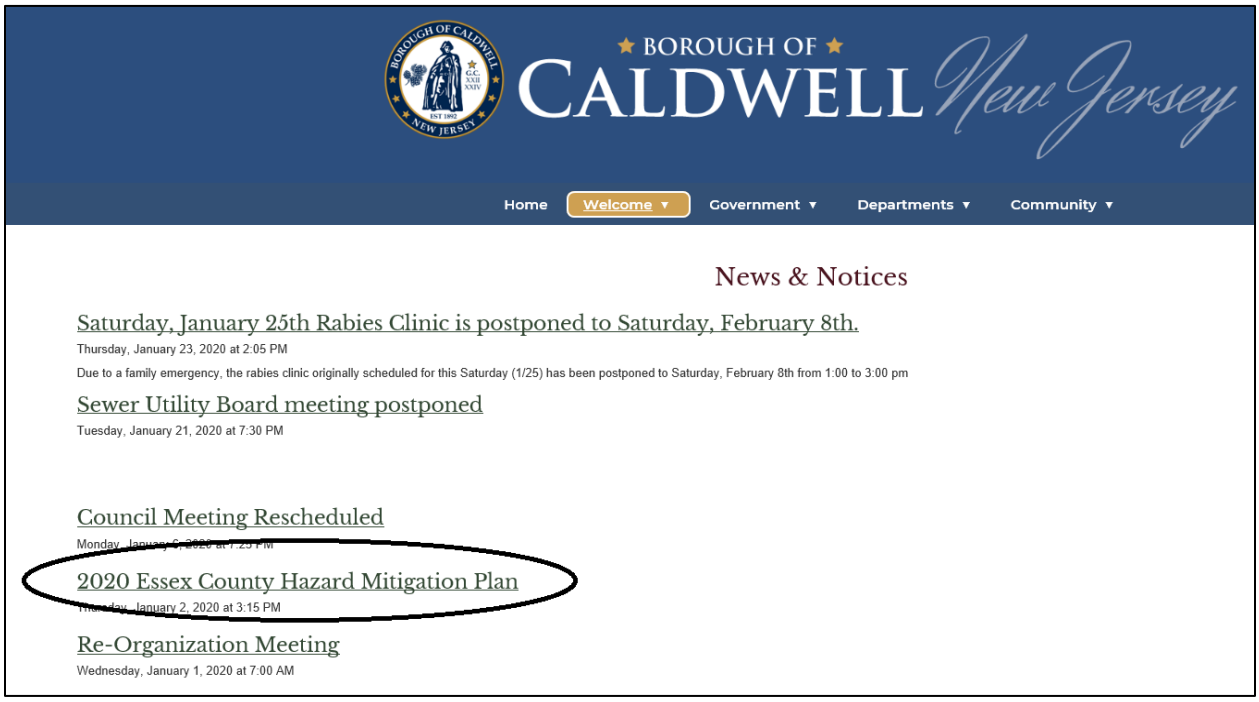


Figure D-10. Livingston Electronic Board



Figure D-11. Township of Livingston's Website Dedicated to the Hazard Mitigation Plan

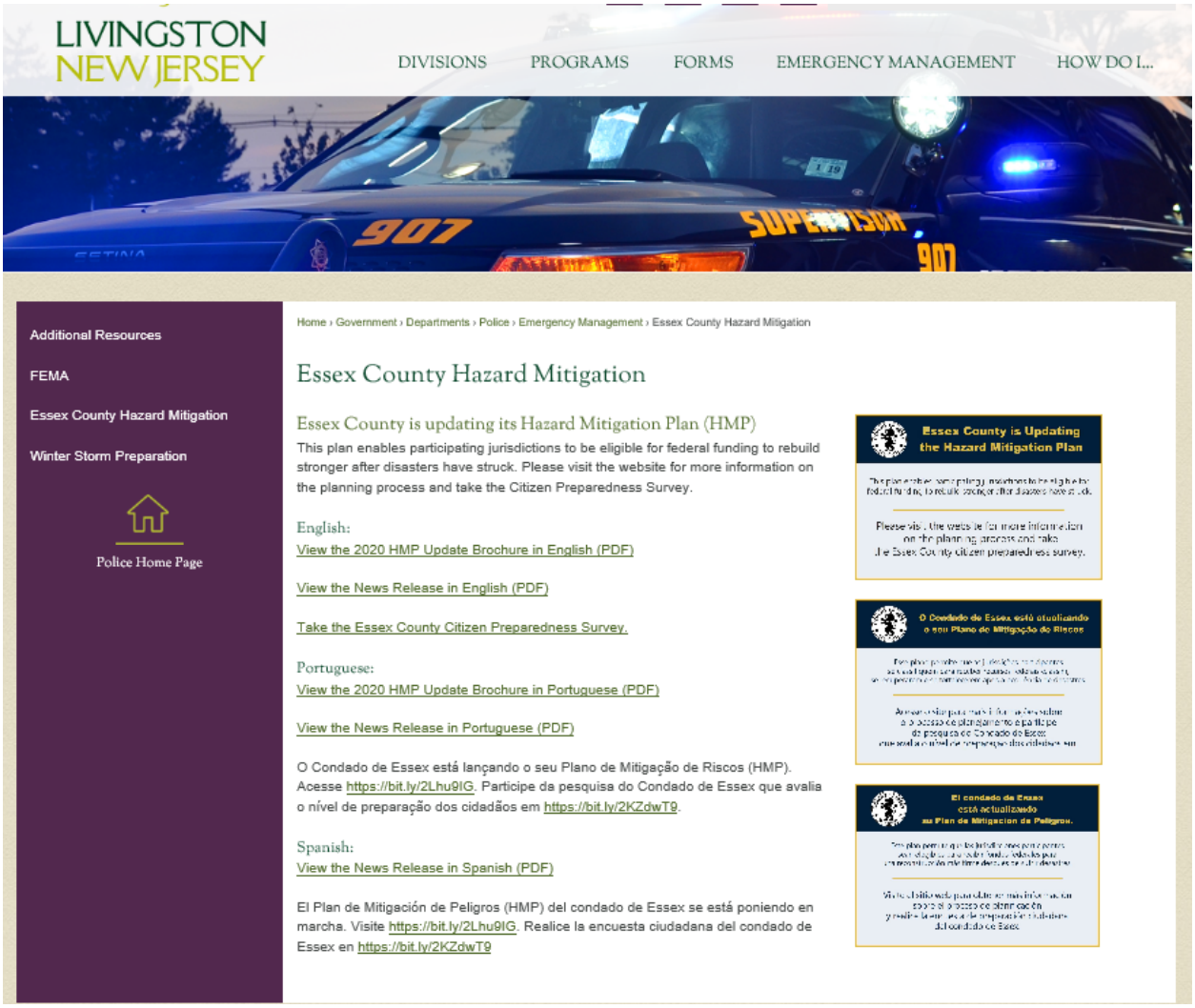


Figure D-12. Township of Millburn Website

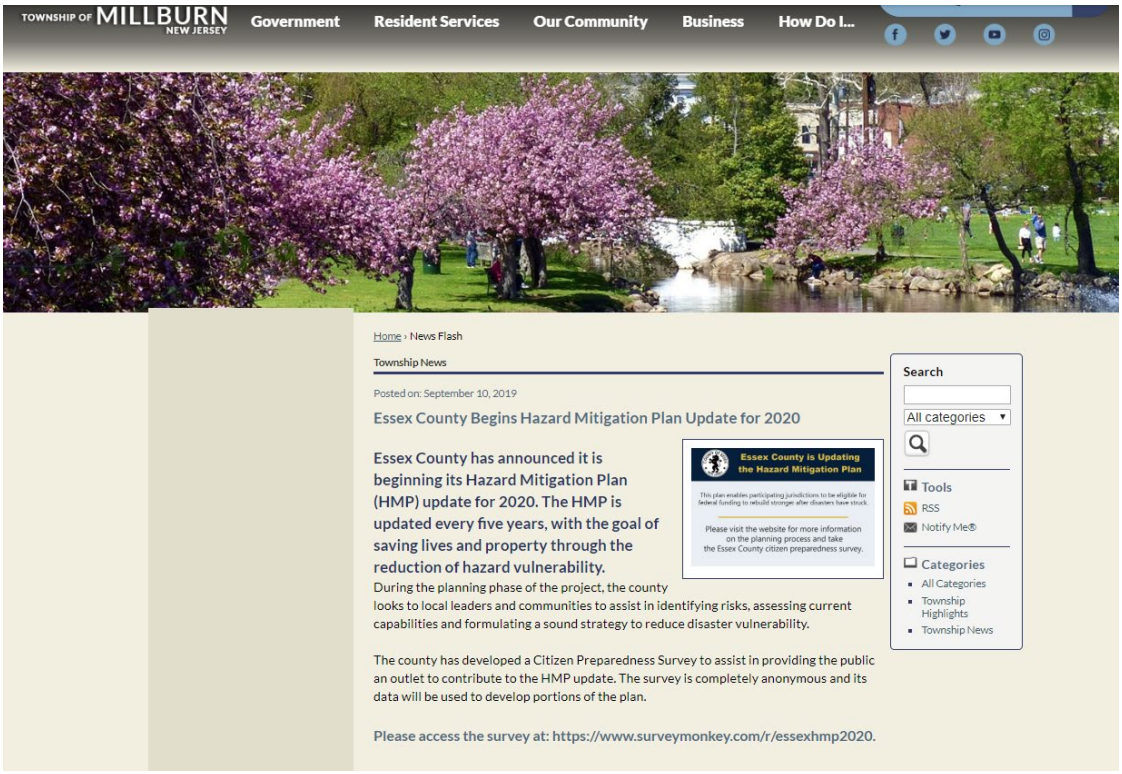


Figure D-13. Township of Millburn Facebook Post



Figure D-14. Township of Millburn Twitter



Figure D-15. Township of Millburn Neighborhood News Online



Editor
Matt Kass
917-209-5787
Advertise in This Town

TAP into Millburn/Short Hills
Your Neighborhood News Online

HOME SECTIONS OPINION EVENTS CLASSIFIEDS REAL ESTATE DIRECTORY OBITUARIES

Millburn Residents Urged to Take Survey for County Hazard Mitigation Plan

By MILLBURN TOWNSHIP
September 11, 2019 at 2:07 AM

Credits: Arlene Pomerantz

MILLBURN, NJ - Essex County has announced it is beginning its Hazard Mitigation Plan (HMP) update for 2020. The HMP is updated every five years, with the goal of saving lives and property through the reduction of hazard vulnerability.

During the planning phase of the project, the county looks to local leaders and communities to assist in identifying risks, assessing current capabilities and formulating a sound strategy to reduce disaster vulnerability.

The county has developed a Citizen Preparedness Survey to assist in providing the public an outlet to contribute to the HMP update. The survey is completely anonymous and its data will be used to develop portions of the plan.

The survey can be accessed at the following link: https://www.surveymonkey.com/r/essexhmp2020

Figure D-16. North Caldwell Website



Figure D-17. West Caldwell Website

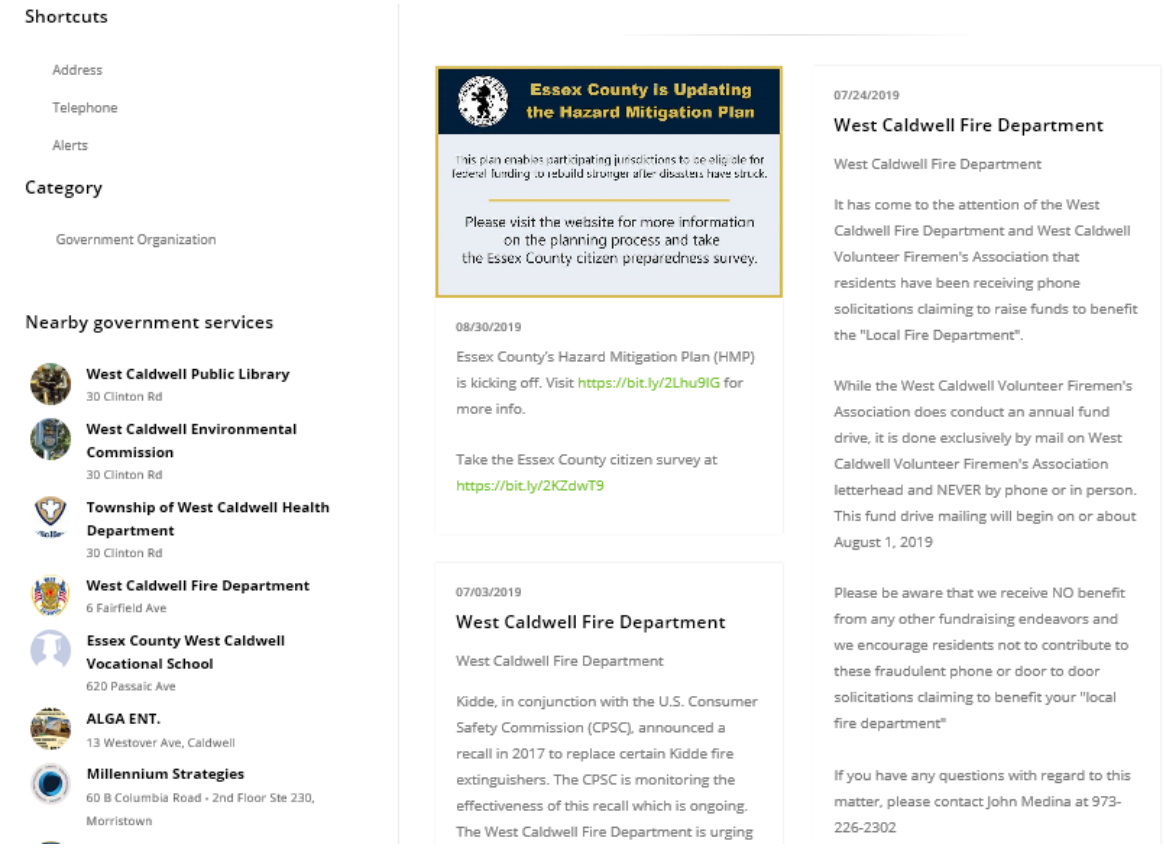


Figure D-18. Verona Twitter Post regarding HMP Kickoff and Citizen Survey, August 28, 2019

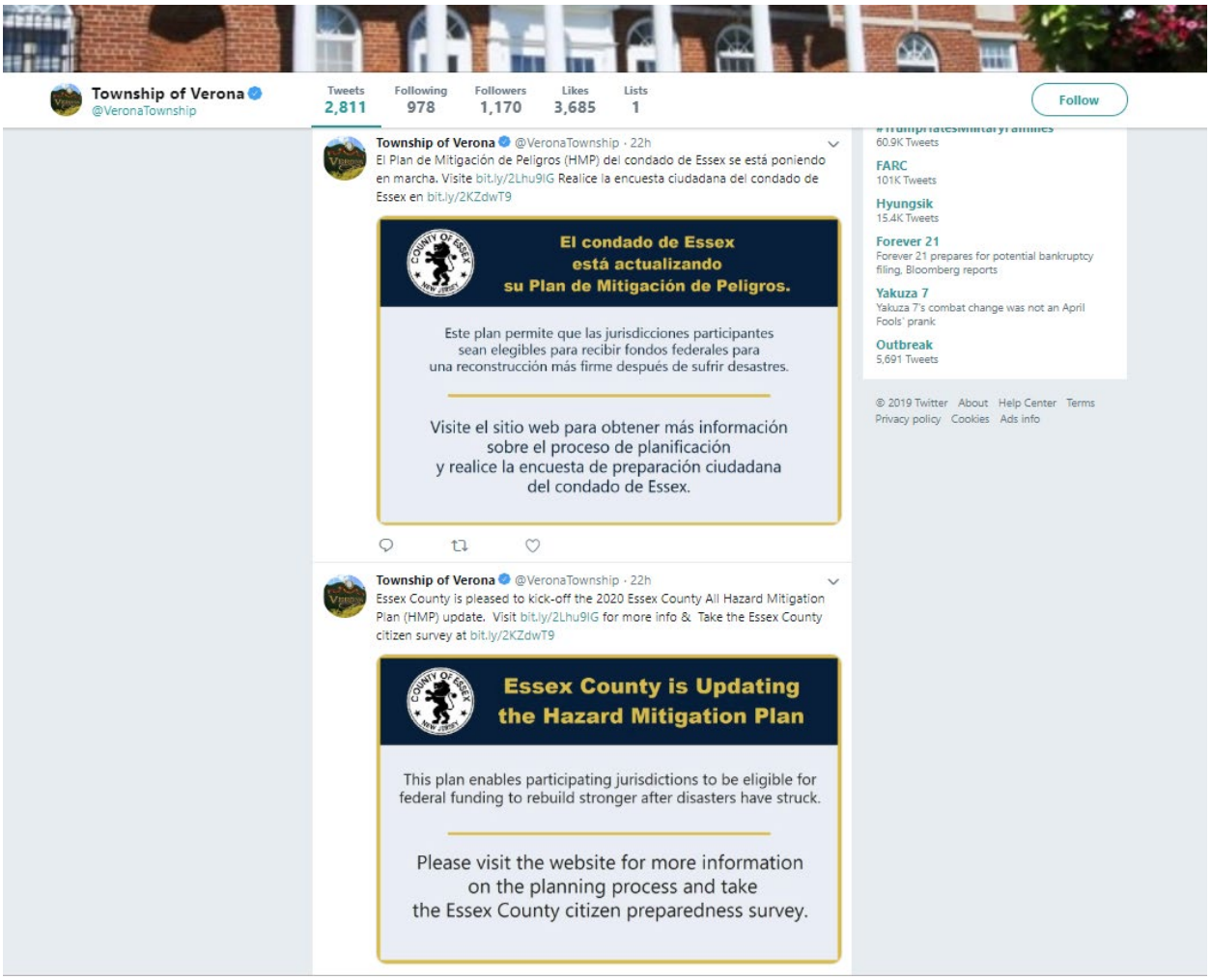
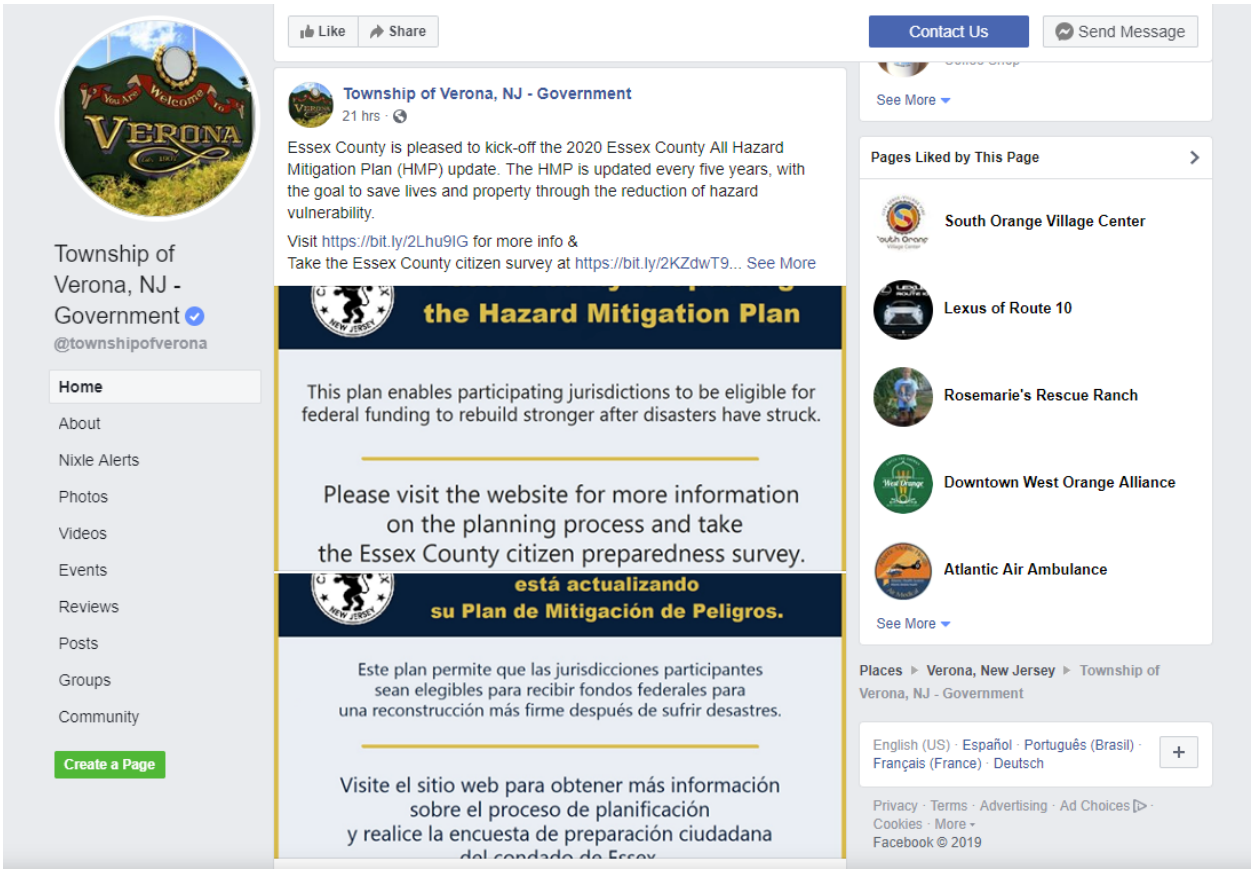


Figure D-19. Township of Verona Facebook Posts regarding HMP Kickoff and Citizen Survey, August 28, 2019



D.5 NEIGHBORING COUNTIES AND COMMUNITIES

As discussed in Section 2 (Planning Process), Essex County has kept surrounding and nearby counties and municipalities apprised of the project and invited them to participate in the planning process. The following counties were invited to the Stakeholder Focus Group sessions in November 2019. In addition, surrounding counties were contacted on January 2, 2020 via formal letter and email from the Essex County Sheriff to inform them about the draft plan documents and to invite them to provide input.

- Bergen County, New Jersey – invitation to the stakeholder workshop and letter regarding the draft plan public review
- Hudson County, New Jersey – invitation to the stakeholder workshop and letter regarding the draft plan public review
- Morris County, New Jersey - invitation to the stakeholder workshop and letter regarding the draft plan public review
- Passaic County, New Jersey - invitation to the stakeholder workshop and letter regarding the draft plan public review
- Union County, New Jersey - invitation to the stakeholder workshop and letter regarding the draft plan public review
- Somerset County, New Jersey - invitation to the stakeholder workshop

OFFICE OF THE SHERIFF

ARMANDO B. FONTOURA, SHERIFF

OEM COORDINATOR

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UNDERSHERIFFS
FITZGERALD FIGLIUOLO
JOHN GONCALVES
AMIR JONES

CHIEF
JAMES R. SPANGO

Sgt. Matthew J. Tiedemann
285 Campgaw Road
Mahwah, NJ 07430

Re: Essex County All Hazards Mitigation Plan – 2020 Update

Sgt. Tiedemann:

Essex County is updating our All Hazards Mitigation Plan to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The purpose of this plan is to identify vulnerabilities to a variety of natural and man-made disasters, and to develop plans to help minimize losses if disasters should occur. The intent of the plan is to provide a comprehensive document that considers the wide diversity of communities, businesses, and services that are an integral part of Essex County and the region as a whole. In addition to its value as a hazard mitigation plan, the development of this document is also required under the DMA 2000 to ensure eligibility for Federal Mitigation funding.

Due to your proximity to Essex County, the effects of many of these disasters would be similar in your county and your involvement in this process could reap mutual benefits to both counties. By participating in the review of this plan, you will be engaging in the regional coordination of disaster mitigation planning, which is one of the intents of the Mitigation Planning Regulations (44 CFR 201).

Presently, our draft plan is now in a public review period prior to submission to FEMA for approval. By means of this letter, Essex County is seeking your participation in this important planning effort. Specifically, we encourage interested neighboring community representatives to become familiar with this process by reviewing and providing input on the draft and final plan documents by visiting https://www.essexsheriff.com/oem-category/2020-mid-plan-update/.
Any questions or comments regarding the plan can be made directly to our Office of Emergency Management by phone at (973) 324-9750 or by email to essexoem@essexsheriff.com.

Sincerely,

Sheriff Armando B. Fontoura
Emergency Management Coordinator
Essex County Office of Emergency Management

ABF/rp

OFFICE OF THE SHERIFF

ARMANDO B. FONTOURA, SHERIFF

OEM COORDINATOR

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JOHN GONCALVES
AMIR JONES

CHIEF
JAMES R. SPANGO

Mr. James T. Woods
830 Bergen Avenue
Suite 2-C
Jersey City, NJ 07306

Re: Essex County All Hazards Mitigation Plan – 2020 Update

Mr. Woods:

Essex County is updating our All Hazards Mitigation Plan to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The purpose of this plan is to identify vulnerabilities to a variety of natural and man-made disasters, and to develop plans to help minimize losses if disasters should occur. The intent of the plan is to provide a comprehensive document that considers the wide diversity of communities, businesses, and services that are an integral part of Essex County and the region as a whole. In addition to its value as a hazard mitigation plan, the development of this document is also required under the DMA 2000 to ensure eligibility for Federal Mitigation funding.

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Essex County Office of Emergency Management

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CHIEF
JAMES R. SPANGO

Mr. Scott Digiralomo
500 West Hanover Avenue
PO Box 35
Morristown, NJ, 07963

Re: Essex County All Hazards Mitigation Plan – 2020 Update

Mr. Scott Digiralomo:

Essex County is updating our All Hazards Mitigation Plan to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The purpose of this plan is to identify vulnerabilities to a variety of natural and man-made disasters, and to develop plans to help minimize losses if disasters should occur. The intent of the plan is to provide a comprehensive document that considers the wide diversity of communities, businesses, and services that are an integral part of Essex County and the region as a whole. In addition to its value as a hazard mitigation plan, the development of this document is also required under the DMA 2000 to ensure eligibility for Federal Mitigation funding.

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Sincerely,

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Emergency Management Coordinator
Essex County Office of Emergency Management

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AMIR JONES

CHIEF
JAMES R. SPANGO

Mr. Robert A. Lyons Sr.
300 Oldham Road
Wayne, NJ, 07470

Re: Essex County All Hazards Mitigation Plan – 2020 Update

Mr. Robert A. Lyons Sr:

Essex County is updating our All Hazards Mitigation Plan to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The purpose of this plan is to identify vulnerabilities to a variety of natural and man-made disasters, and to develop plans to help minimize losses if disasters should occur. The intent of the plan is to provide a comprehensive document that considers the wide diversity of communities, businesses, and services that are an integral part of Essex County and the region as a whole. In addition to its value as a hazard mitigation plan, the development of this document is also required under the DMA 2000 to ensure eligibility for Federal Mitigation funding.

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Sincerely,

Sheriff Armando B. Fontoura
Emergency Management Coordinator
Essex County Office of Emergency Management

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JOHN GONCALVES
AMIR JONES

CHIEF
JAMES R. SPANGO

Mr. Christopher J. Scaturo
Union County Coordinator
300 North Ave E
Westfield, NJ 07090

Re: Essex County All Hazards Mitigation Plan – 2020 Update

Mr. Scaturo,

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Sincerely,

Sheriff Armando B. Fontoura
Emergency Management Coordinator
Essex County Office of Emergency Management

ABF/sk

Essex County Hazard Mitigation Plan Update - Citizen Survey (short version)

Essex County is currently updating its hazard mitigation plan which assesses hazards that impact the county and its municipalities. Please take a few minutes to complete this survey to help us better coordinate activities and reduce the risk of injury and property damage from natural hazards. To complete the full survey, we encourage you to visit https://www.surveymonkey.com/r/essexhmp2020

Essex County Hazard Mitigation Plan Update - Citizen Survey (short version)

Natural Hazard Information

1. In the past 10 years, which of the following natural hazard events have you experienced in Essex County? Check all that apply.

- [ ] Coastal (erosion, hurricane, tropical storm, Nor'Easter, storm surge)
- [ ] Climate Change (sea level rise, other)
- [ ] Dam Failure
- [ ] Drought
- [ ] Earthquake
- [ ] Extreme Temperature
- [ ] Flooding – street/property
- [ ] Other (please specify)
- [ ] Flooding – stormwater
- [ ] Flooding – house
- [ ] Geologic (landslide, sinkholes, subsidence)
- [ ] Severe Weather (tornado, thunderstorm, hail)
- [ ] Severe Winter Storms (blizzard, heavy snow)
- [ ] Wildfire
- [ ] None

2. Have you experienced any damages or losses to your property or business in the last 5 years from a hazard event? If so, please describe the location, event and any losses.

3. How do you receive your information concerning a disaster? Check all that apply.

- [ ] County website
- [ ] Municipal website
- [ ] Newspaper
- [ ] Municipal Email
- [ ] Police, Fire, EMS, 9-1-1
- [ ] Public Meetings, Workshops, Public Events
- [ ] Schools
- [ ] Other (please specify)
- [ ] TV
- [ ] Radio
- [ ] Outdoor Advertisements
- [ ] Internet
- [ ] Social Media (Facebook, Twitter)
- [ ] Chamber of Commerce
- [ ] Public Library

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

1 (least prepared) **3** **5 (most prepared)**

Essex County Hazard Mitigation Plan Update - Citizen Survey (short version)

Hazard Mitigation

5. Identify any specific vulnerable areas you are aware of in the municipality you live (e.g. floodprone areas, frequent power outages, critical facilities without backup power, etc.). Please list street names and other specific identifiers, if possible.

6. What can be done to address the vulnerable areas or problems identified in your community identified in question #5 above to reduce future hazard risk?

7. Do you feel that your municipality is doing enough towards prevention and mitigation from hazards? Please provide details for your answer (e.g., what can be done to address the problems?).

- ◯ Yes
- ◯ No

Please provide details for your answer.

Essex County Hazard Mitigation Plan Update - Citizen Survey (short version)

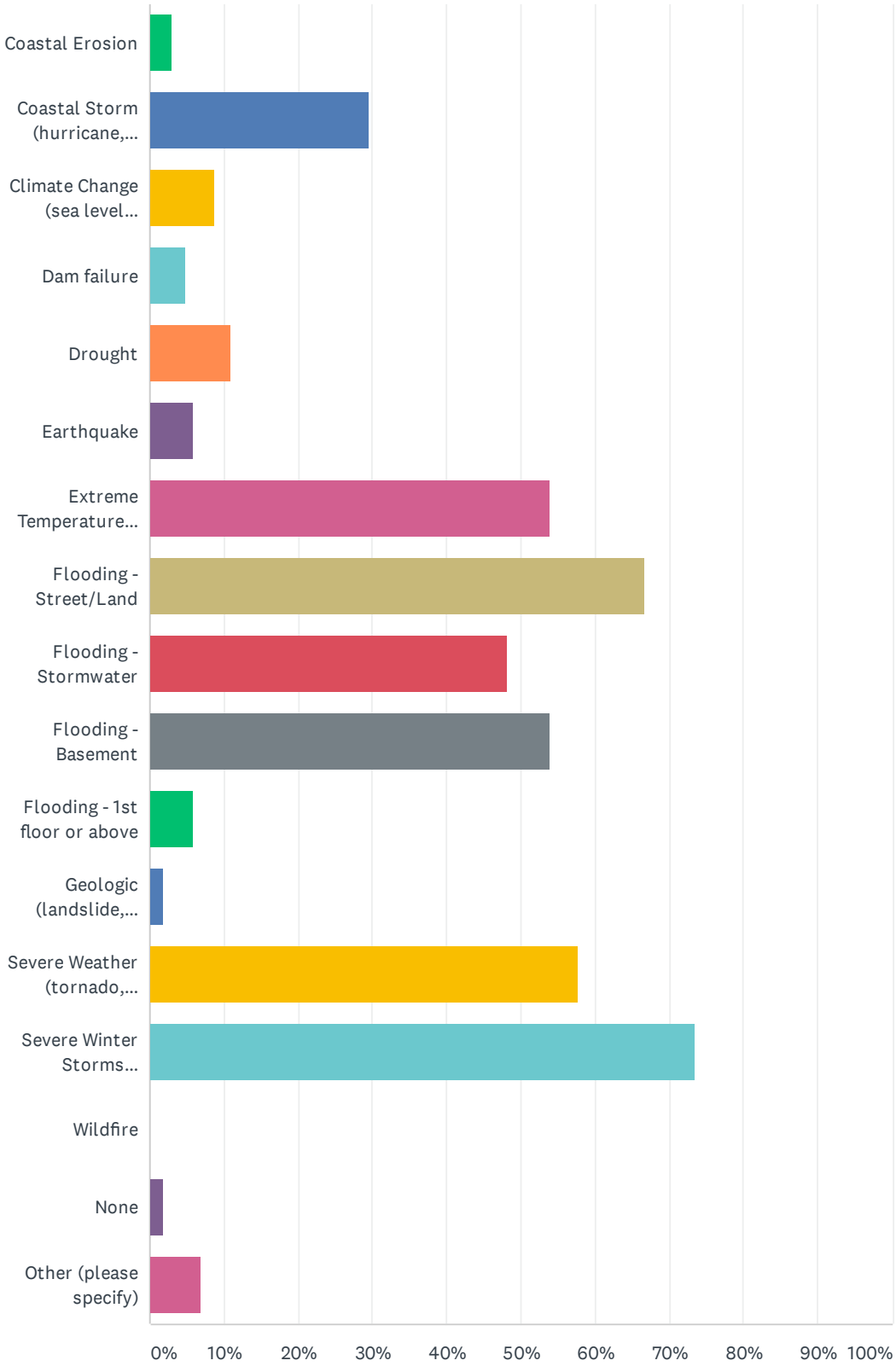
General Household Information

8. Please indicate the municipality in which you live:

- ◯ Belleville
- ◯ Bloomfield
- ◯ Caldwell
- ◯ Cedar Grove
- ◯ East Orange
- ◯ Essex Fells
- ◯ Fairfield
- ◯ Glen Ridge
- ◯ Irvington
- ◯ Livingston
- ◯ Maplewood
- ◯ Millburn
- ◯ Montclair
- ◯ Newark
- ◯ North Caldwell
- ◯ Nutley
- ◯ Orange
- ◯ Roseland
- ◯ South Orange
- ◯ Verona
- ◯ West Caldwell
- ◯ West Orange
- ◯ Other (please specify)

Q1 In the past 10 years, which of the following natural hazard events have you experienced in Essex County? Check all that apply.

Answered: 102 Skipped: 0

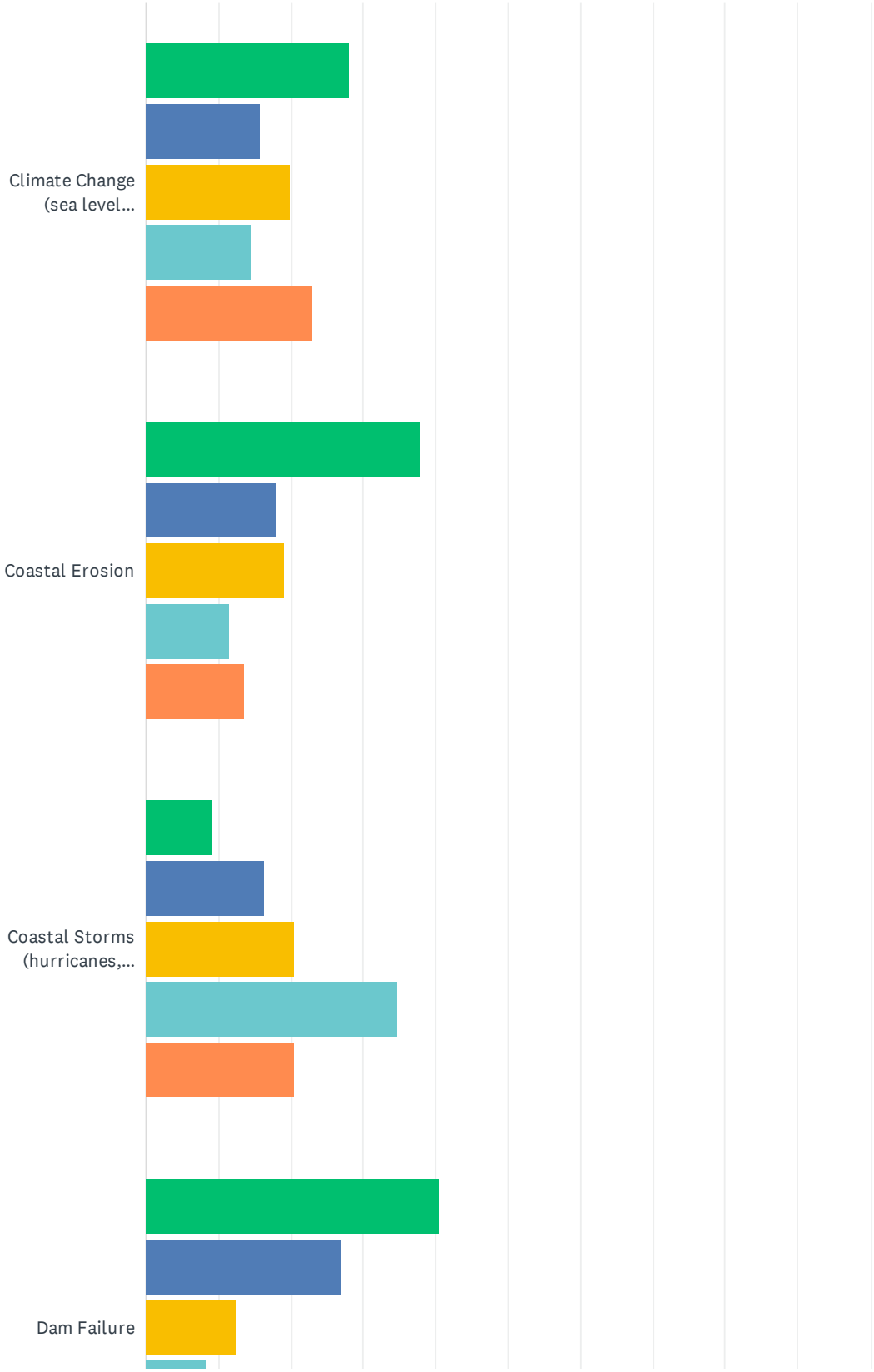

Coastal Erosion
Coastal Storm (hurricane,...
Climate Change (sea level...
Dam failure
Drought
Earthquake
Extreme Temperature...
Flooding - Street/Land
Flooding - Stormwater
Flooding - Basement
Flooding - 1st floor or above
Geologic (landslide,...
Severe Weather (tornado,...
Severe Winter Storms...
Wildfire
None
Other (please specify)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

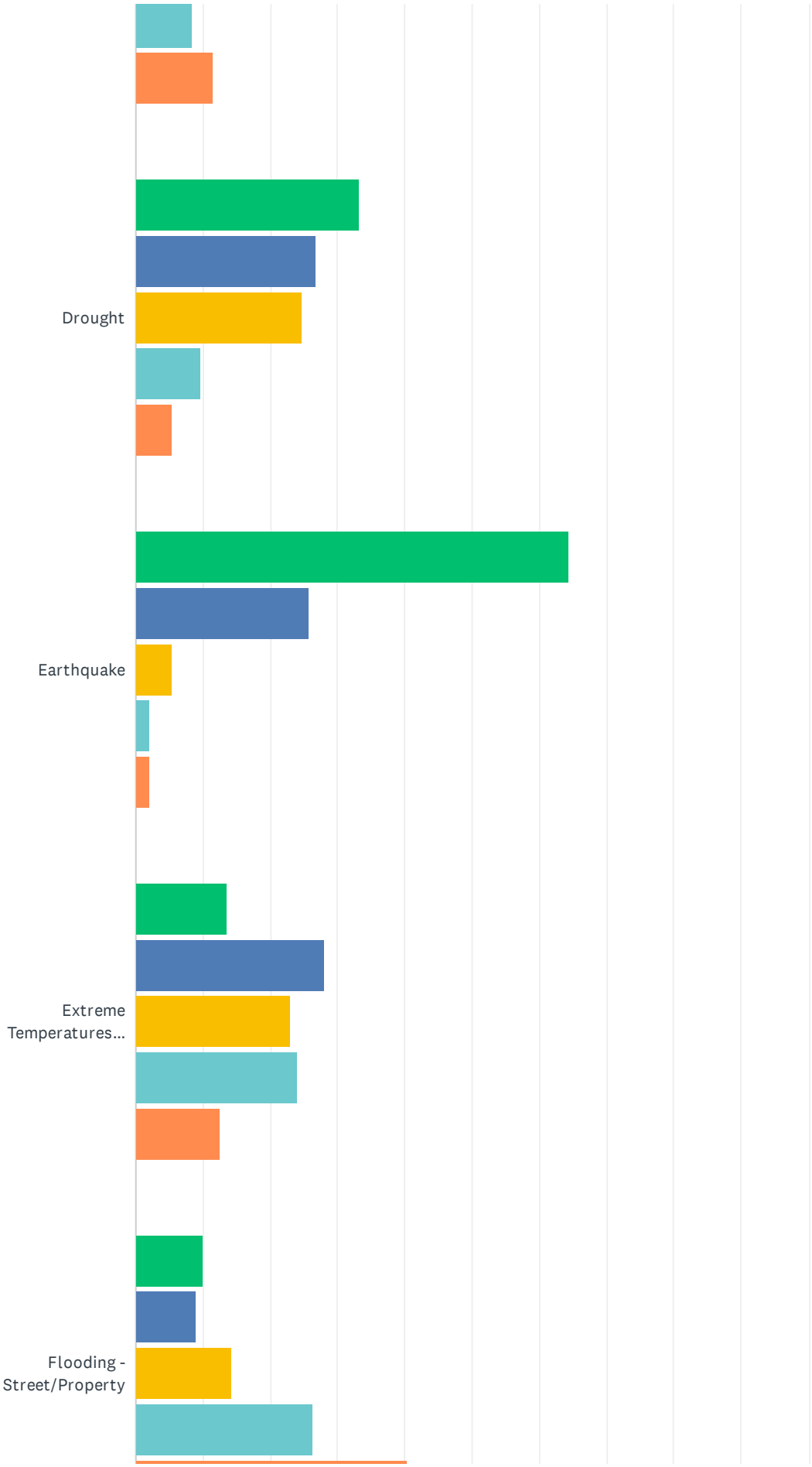
ANSWER CHOICES	RESPONSES	
Coastal Erosion	2.94%	3
Coastal Storm (hurricane, tropical storm, nor'easter, surge)	29.41%	30
Climate Change (sea level rise, other)	8.82%	9
Dam failure	4.90%	5
Drought	10.78%	11
Earthquake	5.88%	6
Extreme Temperature (heat and cold)	53.92%	55
Flooding - Street/Land	66.67%	68
Flooding - Stormwater	48.04%	49
Flooding - Basement	53.92%	55
Flooding - 1st floor or above	5.88%	6
Geologic (landslide, sinkholes, subsidence)	1.96%	2
Severe Weather (tornado, thunderstorm, hail)	57.84%	59
Severe Winter Storms (blizzard, heavy snow, ice)	73.53%	75
Wildfire	0.00%	0
None	1.96%	2
Other (please specify)	6.86%	7
Total Respondents: 102		

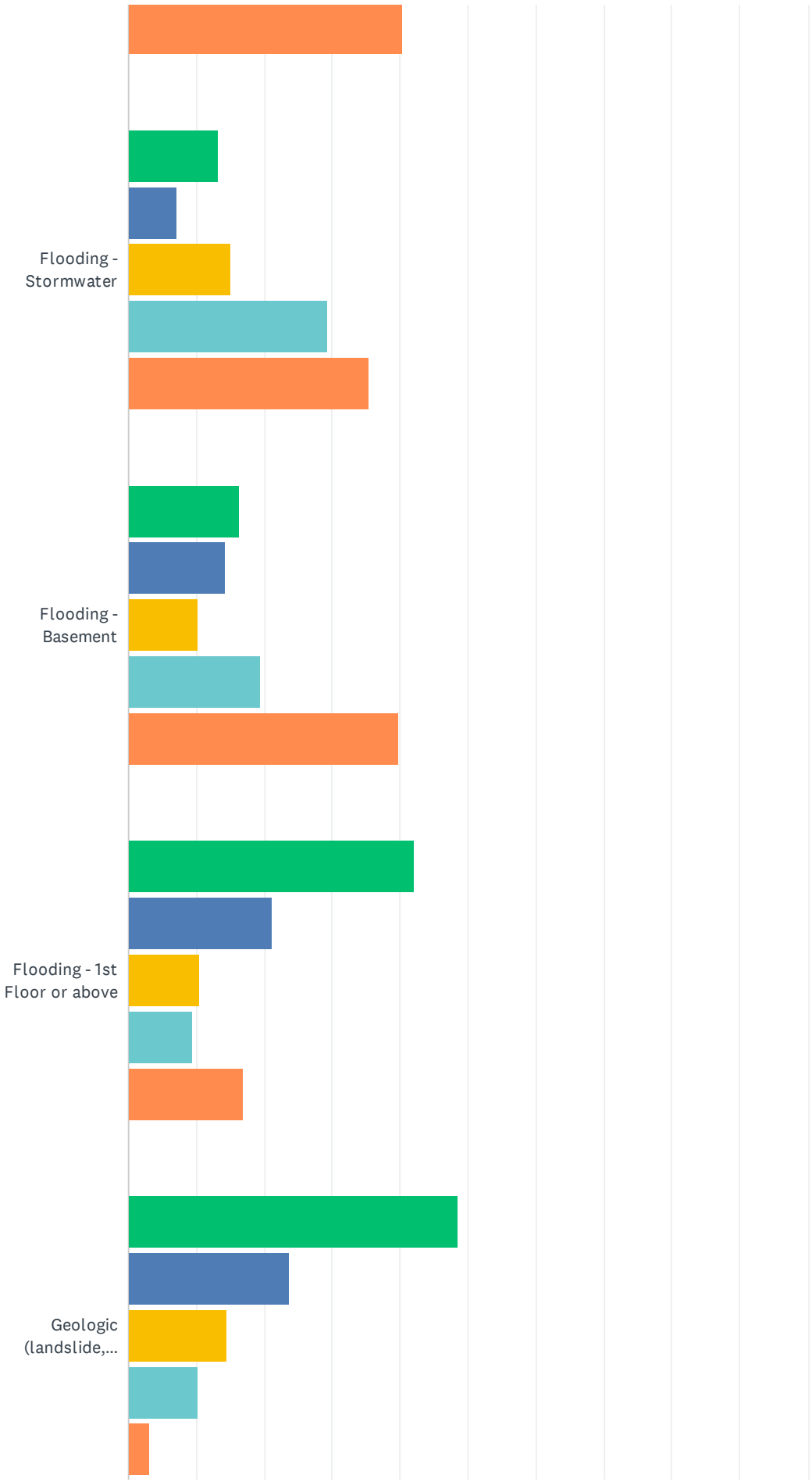
#	OTHER (PLEASE SPECIFY)	DATE
1	Increase in severe wind storms	9/19/2019 4:15 PM
2	Pipeline Explosion	9/4/2019 7:24 AM
3	Flash flooding	9/3/2019 11:07 PM
4	Hurricanes	8/31/2019 12:26 PM
5	Home damage from flooding	8/30/2019 11:21 AM
6	Tree fell thru house during Sandy	8/30/2019 7:47 AM
7	Ice storms and roads not being salted or plowed	8/29/2019 6:51 PM

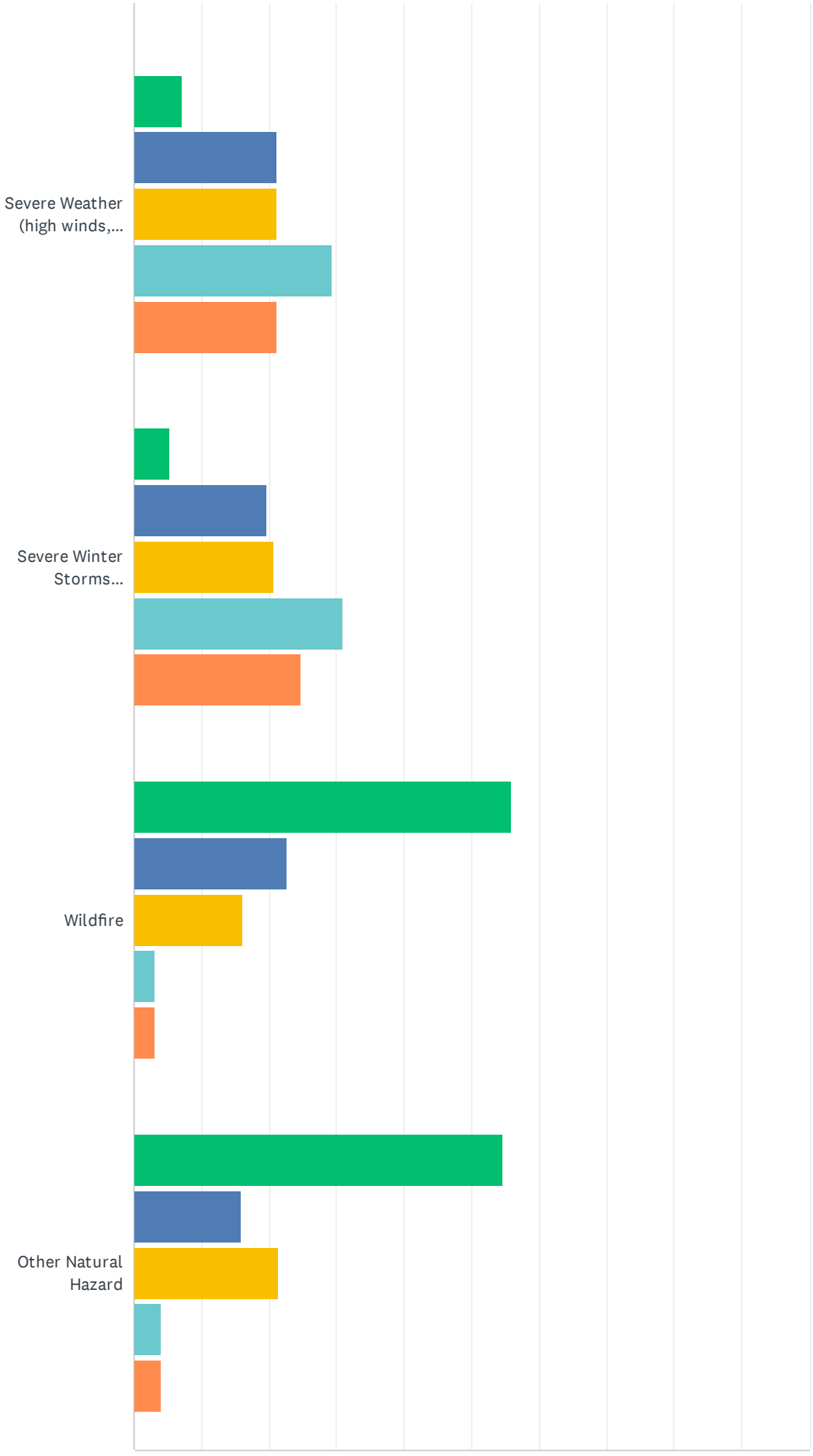
Q2 How concerned are you about the following natural hazards in Essex County? Please check one for each hazard.

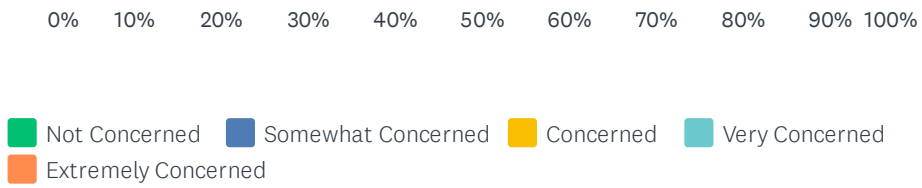
Answered: 102 Skipped: 0




Drought
Earthquake
Extreme Temperatures...
Flooding - Street/Property


Flooding - Stormwater
Flooding - Basement
Flooding - 1st Floor or above
Geologic (landslide,...


Severe Weather (high winds,...
Severe Winter Storms...
Wildfire
Other Natural Hazard



	NOT CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	EXTREMELY CONCERNED	TOTAL RESPONDENTS
Climate Change (sea level rise)	28.13% 27	15.63% 15	19.79% 19	14.58% 14	22.92% 22	96
Coastal Erosion	37.89% 36	17.89% 17	18.95% 18	11.58% 11	13.68% 13	95
Coastal Storms (hurricanes, tropical storms, storm surge, Nor'Easter)	9.18% 9	16.33% 16	20.41% 20	34.69% 34	20.41% 20	98
Dam Failure	40.63% 39	27.08% 26	12.50% 12	8.33% 8	11.46% 11	96
Drought	33.33% 31	26.88% 25	24.73% 23	9.68% 9	5.38% 5	93
Earthquake	64.52% 60	25.81% 24	5.38% 5	2.15% 2	2.15% 2	93
Extreme Temperatures (heat and cold)	13.54% 13	28.13% 27	22.92% 22	23.96% 23	12.50% 12	96
Flooding - Street/Property	10.10% 10	9.09% 9	14.14% 14	26.26% 26	40.40% 40	99
Flooding - Stormwater	13.13% 13	7.07% 7	15.15% 15	29.29% 29	35.35% 35	99
Flooding - Basement	16.33% 16	14.29% 14	10.20% 10	19.39% 19	39.80% 39	98
Flooding - 1st Floor or above	42.11% 40	21.05% 20	10.53% 10	9.47% 9	16.84% 16	95
Geologic (landslide, sinkholes, subsidence)	48.45% 47	23.71% 23	14.43% 14	10.31% 10	3.09% 3	97
Severe Weather (high winds, lightning, hail)	7.07% 7	21.21% 21	21.21% 21	29.29% 29	21.21% 21	99
Severe Winter Storms (blizzard, heavy snow, ice)	5.15% 5	19.59% 19	20.62% 20	30.93% 30	24.74% 24	97
Wildfire	55.91% 52	22.58% 21	16.13% 15	3.23% 3	3.23% 3	93
Other Natural Hazard	54.67% 41	16.00% 12	21.33% 16	4.00% 3	4.00% 3	75

#	OTHER (PLEASE SPECIFY)	DATE
1	Dramatic recent increase in destructive invasive plant and insect proliferation due to temperature increases and wind/water borne introduction. Drinking and household water contamination due to flooding and storm damage	9/11/2019 9:24 PM
2	Coastal erosion isn’t happening here, but it’s happening along the NJ coast and that affects everything. Also, overdevelopment is increasing the impact of flooding.	9/4/2019 11:44 AM
3	Corruption	9/4/2019 10:53 AM
4	Gas Pipeline Explosion	9/4/2019 7:24 AM
5	Flooding is getting worse every time it occurs. As a life long Essex County resident, mostly in Fairfield, I have witnessed and experienced the danger, fear, and financial and emotional costs that flooding causes. I have been to the meetings and signed the petitions and nothing is ever done except for another study. Completely useless and utterly frustrating.	8/30/2019 11:21 AM

Q3 In the last 10 years, were you evacuated from your home as a result of a disaster (e.g. flooding)? If so, how long were you displaced? Did you go to a shelter?

Answered: 97 Skipped: 5

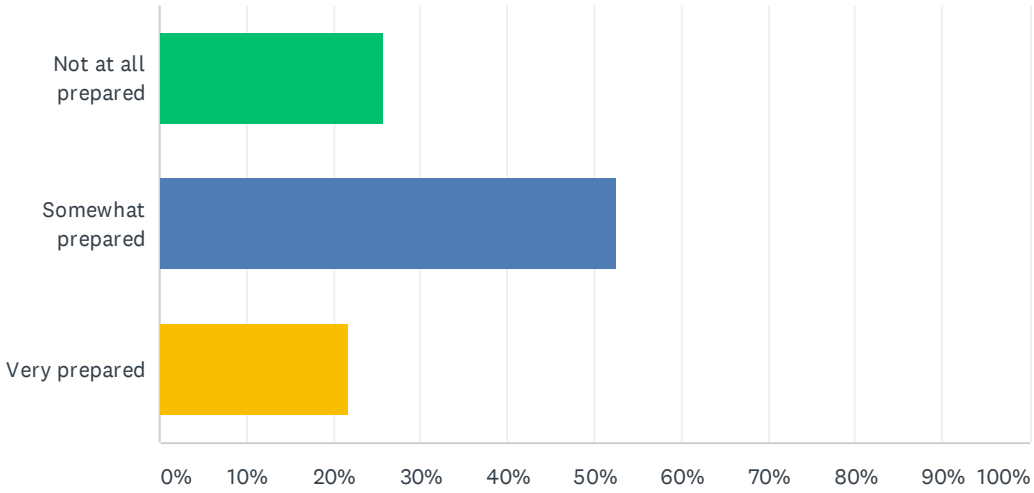
#	RESPONSES	DATE
1	No	11/19/2019 10:46 AM
2	no	10/7/2019 8:00 AM
3	No	10/4/2019 10:27 AM
4	No	10/4/2019 9:54 AM
5	No	9/25/2019 3:47 PM
6	no	9/25/2019 3:33 PM
7	no	9/25/2019 12:28 PM
8	no	9/25/2019 7:18 AM
9	no	9/24/2019 9:59 PM
10	Yes. Flooding. Out of the house for a week and stayed with a relative.	9/24/2019 9:17 PM
11	2 weeks, went to a hotel, wife is disabled	9/24/2019 6:24 PM
12	4 days at relative’s house	9/24/2019 4:11 PM
13	Yes. Did not go to a shelter	9/24/2019 3:43 PM
14	No, was not evacuated	9/24/2019 3:43 PM
15	6 months displaced. Stayed with family	9/24/2019 2:41 PM
16	No	9/24/2019 12:08 PM
17	no	9/24/2019 11:52 AM
18	No	9/23/2019 7:17 PM
19	no	9/19/2019 10:15 PM
20	No	9/19/2019 6:47 PM
21	Not evacuated	9/19/2019 4:15 PM
22	No	9/19/2019 11:44 AM
23	No	9/17/2019 7:31 AM
24	No	9/13/2019 5:59 PM
25	No	9/12/2019 6:22 PM
26	No	9/11/2019 10:48 PM
27	7 days during Hurricane Sandy due to power outage - stayed with family	9/11/2019 9:24 PM
28	No	9/11/2019 9:19 PM
29	no	9/11/2019 8:12 PM
30	Yes, 2 weeks in a Hotel.	9/11/2019 7:05 PM
31	No	9/11/2019 6:29 PM
32	No	9/11/2019 5:41 PM
33	N/A	9/11/2019 4:51 PM
34	Had to leave for 5 days due to loss of power and heat from power out during winter	9/11/2019 1:52 PM
35	No	9/11/2019 12:13 PM
36	No	9/11/2019 11:08 AM
37	No	9/11/2019 8:40 AM

38	2 weeks	9/11/2019 8:32 AM
39	no	9/10/2019 10:45 PM
40	No	9/10/2019 8:31 PM
41	No	9/10/2019 8:21 PM
42	No	9/6/2019 9:08 AM
43	No	9/5/2019 5:33 AM
44	No	9/4/2019 5:00 PM
45	No	9/4/2019 11:44 AM
46	No	9/4/2019 10:53 AM
47	NO	9/4/2019 8:11 AM
48	No	9/4/2019 7:24 AM
49	No	9/3/2019 11:07 PM
50	no	9/3/2019 5:15 PM
51	No	9/3/2019 2:32 PM
52	No	9/3/2019 2:16 PM
53	no - voluntarily relocated several days no power during sandy	9/3/2019 12:34 PM
54	No	9/3/2019 11:06 AM
55	No	9/3/2019 10:51 AM
56	No	9/2/2019 7:07 AM
57	No	9/1/2019 4:40 PM
58	No	9/1/2019 10:52 AM
59	No	9/1/2019 10:23 AM
60	no	9/1/2019 7:33 AM
61	No	8/31/2019 7:54 PM
62	4 days	8/31/2019 2:41 PM
63	No	8/31/2019 1:33 PM
64	No	8/31/2019 12:26 PM
65	No	8/30/2019 7:26 PM
66	No	8/30/2019 3:28 PM
67	No	8/30/2019 3:26 PM
68	No	8/30/2019 2:23 PM
69	Yes about 10 days - hotel	8/30/2019 2:14 PM
70	No-never evacuated, although I came close once. However I have had damage to my home and loss of property and have been isolated in my home for 3 or 4 days at a time.	8/30/2019 11:21 AM
71	no	8/30/2019 11:07 AM
72	no	8/30/2019 10:42 AM
73	No	8/30/2019 10:25 AM
74	No.	8/30/2019 10:18 AM
75	5 days. Stayed with other family members.	8/30/2019 10:05 AM

76	2 weeks. Family stayed in hotel	8/30/2019 9:45 AM
77	No	8/30/2019 9:31 AM
78	No	8/30/2019 9:09 AM
79	No	8/30/2019 9:06 AM
80	No	8/30/2019 9:06 AM
81	No	8/30/2019 8:09 AM
82	We spent 2 months in hotel after Sandy damage	8/30/2019 7:47 AM
83	No	8/29/2019 9:00 PM
84	No	8/29/2019 6:51 PM
85	NO	8/29/2019 4:45 PM
86	Went to shelter for meals after Superstom Sandy	8/29/2019 3:54 PM
87	No	8/28/2019 11:21 PM
88	No	8/28/2019 1:32 PM
89	0	8/28/2019 12:31 PM
90	No	8/28/2019 11:50 AM
91	Not evacuated	8/28/2019 11:03 AM
92	No	8/28/2019 10:40 AM
93	No	8/28/2019 10:27 AM
94	No	8/28/2019 10:12 AM
95	no	8/5/2019 3:31 PM
96	No	8/5/2019 11:37 AM
97	10 days and no	6/20/2019 2:38 PM

Q4 How prepared is your household to get along without electricity or natural gas for one to five days?

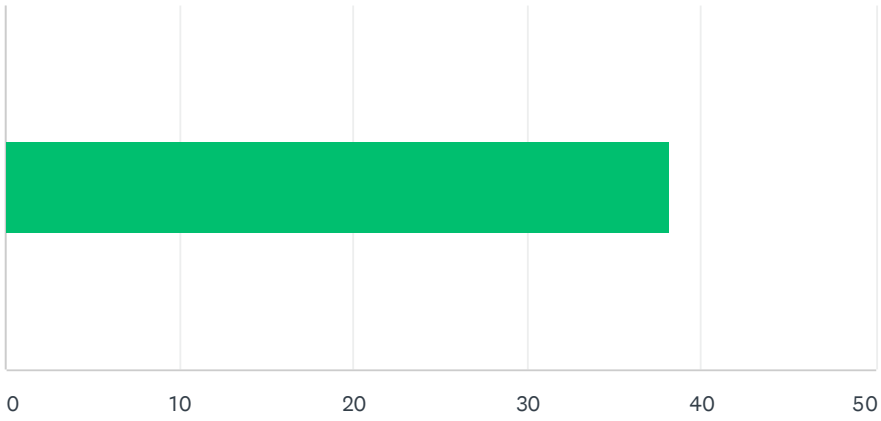
Answered: 101 Skipped: 1



ANSWER CHOICES	RESPONSES	
Not at all prepared	25.74%	26
Somewhat prepared	52.48%	53
Very prepared	21.78%	22
TOTAL		101

Q5 Please rank how prepared you feel and your household are for natural disaster events likely to occur within your community. Rank on a scale of 1 to 5, with 5 representing the most prepared.

Answered: 101 Skipped: 1



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	38	3,858	101
Total Respondents: 101			

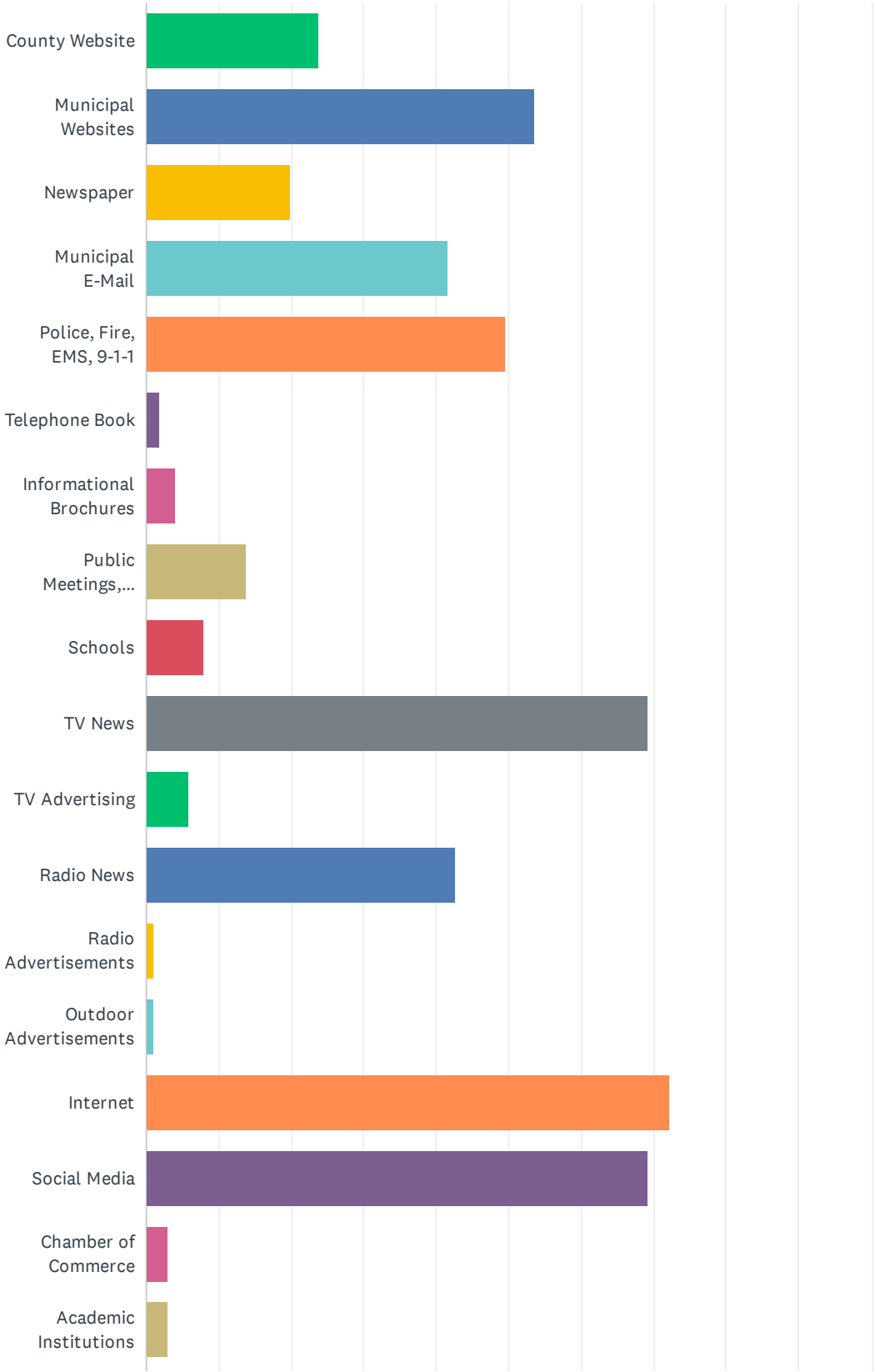
#		DATE
1	0	12/3/2019 5:19 AM
2	5	11/19/2019 10:46 AM
3	69	10/7/2019 8:00 AM
4	1	10/4/2019 10:27 AM
5	40	10/4/2019 9:54 AM
6	2	9/25/2019 3:47 PM
7	85	9/25/2019 3:33 PM
8	4	9/25/2019 12:28 PM
9	5	9/25/2019 7:18 AM
10	5	9/24/2019 9:59 PM
11	36	9/24/2019 9:17 PM
12	28	9/24/2019 6:24 PM
13	16	9/24/2019 4:11 PM
14	1	9/24/2019 3:43 PM
15	1	9/24/2019 3:43 PM
16	22	9/24/2019 2:41 PM
17	57	9/24/2019 12:08 PM
18	75	9/24/2019 11:52 AM
19	1	9/23/2019 7:17 PM
20	80	9/19/2019 10:15 PM
21	75	9/19/2019 6:47 PM
22	50	9/19/2019 4:15 PM
23	48	9/19/2019 11:44 AM
24	1	9/17/2019 7:31 AM
25	6	9/13/2019 5:59 PM
26	40	9/13/2019 4:34 PM
27	10	9/12/2019 6:22 PM
28	1	9/11/2019 10:48 PM
29	75	9/11/2019 9:24 PM
30	1	9/11/2019 9:19 PM
31	50	9/11/2019 8:12 PM
32	2	9/11/2019 7:05 PM
33	51	9/11/2019 6:29 PM
34	3	9/11/2019 5:41 PM
35	85	9/11/2019 4:51 PM
36	37	9/11/2019 1:52 PM
37	65	9/11/2019 12:13 PM

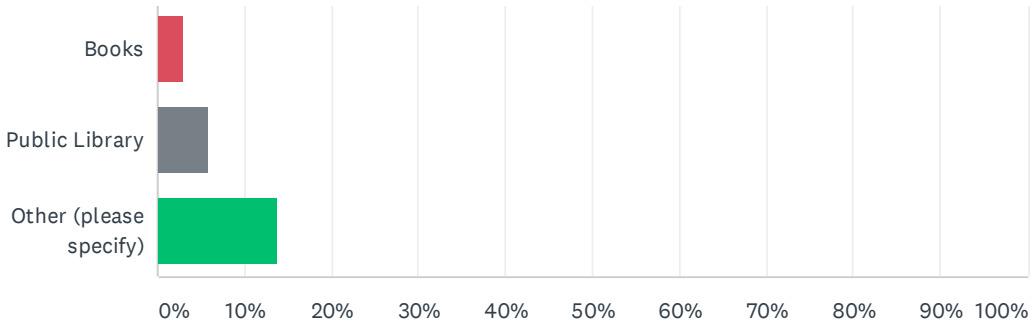
38	100	9/11/2019 11:08 AM
39	4	9/11/2019 8:40 AM
40	91	9/11/2019 8:32 AM
41	60	9/10/2019 10:45 PM
42	3	9/10/2019 8:31 PM
43	48	9/10/2019 8:21 PM
44	51	9/6/2019 9:08 AM
45	52	9/5/2019 5:33 AM
46	66	9/4/2019 5:00 PM
47	52	9/4/2019 11:44 AM
48	84	9/4/2019 10:53 AM
49	74	9/4/2019 8:11 AM
50	1	9/4/2019 7:24 AM
51	3	9/3/2019 11:07 PM
52	4	9/3/2019 5:15 PM
53	51	9/3/2019 2:32 PM
54	0	9/3/2019 2:16 PM
55	50	9/3/2019 12:34 PM
56	66	9/3/2019 11:06 AM
57	2	9/3/2019 10:51 AM
58	45	9/2/2019 7:07 AM
59	1	9/1/2019 4:40 PM
60	65	9/1/2019 10:52 AM
61	1	9/1/2019 10:23 AM
62	40	9/1/2019 7:33 AM
63	50	8/31/2019 7:54 PM
64	4	8/31/2019 2:41 PM
65	1	8/31/2019 1:33 PM
66	6	8/31/2019 12:26 PM
67	49	8/30/2019 7:26 PM
68	51	8/30/2019 4:00 PM
69	4	8/30/2019 3:28 PM
70	5	8/30/2019 3:26 PM
71	57	8/30/2019 2:23 PM
72	68	8/30/2019 2:14 PM
73	50	8/30/2019 11:21 AM
74	50	8/30/2019 11:07 AM
75	50	8/30/2019 10:42 AM

76	100	8/30/2019 10:25 AM
77	26	8/30/2019 10:18 AM
78	3	8/30/2019 10:05 AM
79	2	8/30/2019 9:45 AM
80	75	8/30/2019 9:31 AM
81	51	8/30/2019 9:09 AM
82	58	8/30/2019 9:06 AM
83	49	8/30/2019 9:06 AM
84	50	8/30/2019 9:06 AM
85	5	8/30/2019 8:55 AM
86	45	8/30/2019 8:09 AM
87	52	8/29/2019 9:00 PM
88	96	8/29/2019 6:51 PM
89	51	8/29/2019 4:45 PM
90	3	8/29/2019 3:54 PM
91	83	8/28/2019 11:21 PM
92	26	8/28/2019 1:32 PM
93	80	8/28/2019 12:31 PM
94	20	8/28/2019 11:50 AM
95	78	8/28/2019 11:03 AM
96	69	8/28/2019 10:40 AM
97	39	8/28/2019 10:27 AM
98	25	8/28/2019 10:12 AM
99	50	8/5/2019 3:31 PM
100	80	8/5/2019 11:37 AM
101	50	6/20/2019 2:38 PM

Q6 How do you receive your information concerning a disaster? Check all that apply.

Answered: 101 Skipped: 1





ANSWER CHOICES	RESPONSES	
County Website	23.76%	24
Municipal Websites	53.47%	54
Newspaper	19.80%	20
Municipal E-Mail	41.58%	42
Police, Fire, EMS, 9-1-1	49.50%	50
Telephone Book	1.98%	2
Informational Brochures	3.96%	4
Public Meetings, Workshops, Public Awareness Events	13.86%	14
Schools	7.92%	8
TV News	69.31%	70
TV Advertising	5.94%	6
Radio News	42.57%	43
Radio Advertisements	0.99%	1
Outdoor Advertisements	0.99%	1
Internet	72.28%	73
Social Media	69.31%	70
Chamber of Commerce	2.97%	3
Academic Institutions	2.97%	3
Books	2.97%	3
Public Library	5.94%	6
Other (please specify)	13.86%	14
Total Respondents: 101		

#	OTHER (PLEASE SPECIFY)	DATE
1	https://water.weather.gov/	9/24/2019 3:43 PM
2	Text alerts	9/23/2019 7:17 PM
3	Swift Reach	9/19/2019 10:15 PM
4	nixle.us	9/11/2019 9:24 PM
5	Alerts on my phone	9/11/2019 6:29 PM
6	Amateur Radio Emergency Service (ARES)	9/10/2019 10:45 PM
7	Community pages on social media, local and national news.	9/4/2019 11:44 AM
8	Phone call from town	9/3/2019 11:06 AM
9	Text messages/emails from town and town police	9/3/2019 10:51 AM
10	Westessexnow.com	8/31/2019 1:33 PM
11	Text	8/30/2019 3:26 PM
12	Nixle and West Essex Now	8/30/2019 7:47 AM
13	Reverse 911 seems to work just fine	8/29/2019 4:45 PM
14	Nixle Alerts from town	8/28/2019 11:50 AM

Q7 Of the answers you provided above, what are the top three methods you use?

Answered: 92 Skipped: 10

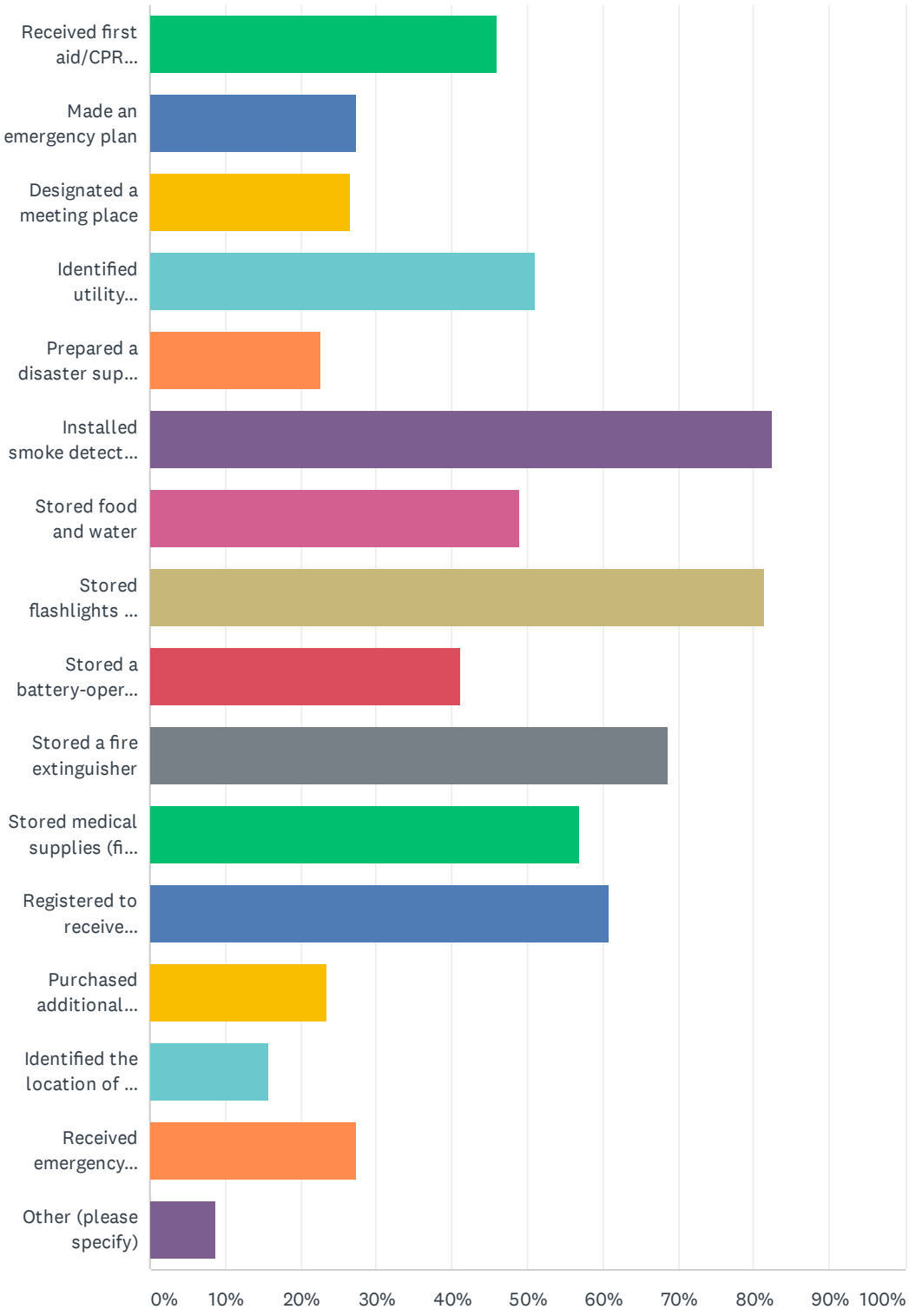
#	RESPONSES	DATE
1	Social Media, Municipal Website, Internet	10/7/2019 8:00 AM
2	TV, Website, Text Message	10/4/2019 9:54 AM
3	Radio, Internet, TV News	9/25/2019 3:47 PM
4	Municipal E-mail, Police/Fire/EMS/911, Social Media	9/25/2019 3:33 PM
5	Books, internet, town texts	9/25/2019 12:28 PM
6	911 Social media Nixle	9/25/2019 7:18 AM
7	1. go on the internet an look at Joe D's Facebook page. he always give the best local updates 2. alerts from our local 911 3. TV and radio	9/24/2019 9:59 PM
8	Town email.	9/24/2019 9:17 PM
9	Internet, social media, app for hurricanes	9/24/2019 6:24 PM
10	Radio, internet, tv	9/24/2019 4:11 PM
11	Social media, news, municipal news	9/24/2019 3:43 PM
12	Internet, municipality, tv news	9/24/2019 3:43 PM
13	Internet	9/24/2019 2:41 PM
14	Internet, Police/Fire/EMS, News	9/24/2019 12:08 PM
15	mmmmmmmmm	9/24/2019 11:52 AM
16	Social media, tv news and alerts	9/23/2019 7:17 PM
17	Social Media Internet Swift Reach	9/19/2019 10:15 PM
18	County, municipal, news	9/19/2019 6:47 PM
19	Internet, radio news, TV news	9/19/2019 4:15 PM
20	Internet	9/19/2019 11:44 AM
21	Township reverse 911 alerts	9/17/2019 7:31 AM
22	Town reverse 911, town email, social media	9/12/2019 6:22 PM
23	Internet, social media, radio	9/11/2019 10:48 PM
24	nixle.us, twitter, internet	9/11/2019 9:24 PM
25	Internet, Radio, Social Media	9/11/2019 9:19 PM
26	email, text, tv news	9/11/2019 8:12 PM
27	Town email and text updates	9/11/2019 7:05 PM
28	Alerts on my phone	9/11/2019 6:29 PM
29	Municipal e-mail Radio TV	9/11/2019 5:41 PM
30	TV and Radio News, Internet (newspaper)	9/11/2019 4:51 PM
31	internet (news, weather) television radio	9/11/2019 1:52 PM
32	TV News, Township website, Police	9/11/2019 12:13 PM
33	The 3 checked	9/11/2019 8:40 AM
34	1. Neighbors 2. Town list serv 3. Internet news	9/11/2019 8:32 AM
35	Municipal website municipal email Internet	9/10/2019 10:45 PM
36	Tv news, town phone calls, internet	9/10/2019 8:31 PM
37	Social, city alerts, media	9/10/2019 8:21 PM

38	Facebook groups	9/5/2019 5:33 AM
39	TV news, internet, social media	9/4/2019 5:00 PM
40	TV news, national news/online national weather center reports, community pages on facebook (for individual info re neighborhoods being affected)	9/4/2019 11:44 AM
41	Internet - social media- police fire etc	9/4/2019 10:53 AM
42	Municipal texts and emails. Emergency notification system in Montclair.	9/4/2019 8:11 AM
43	Listed	9/4/2019 7:24 AM
44	Social media, tv news, people	9/3/2019 11:07 PM
45	Social media Loud speaker Community leadership	9/3/2019 5:15 PM
46	Email internet social media	9/3/2019 2:32 PM
47	Internet, social media, tv news	9/3/2019 2:16 PM
48	only three provided	9/3/2019 12:34 PM
49	TV news, radio news, town phone call	9/3/2019 11:06 AM
50	Social media, internet, and text messages/email from town and town police.	9/3/2019 10:51 AM
51	Social media. Internet. News.	9/2/2019 7:07 AM
52	Text message	9/1/2019 4:40 PM
53	Internet, radio news, TV news	9/1/2019 10:52 AM
54	Internet, TV, husband	9/1/2019 7:33 AM
55	News	8/31/2019 7:54 PM
56	TV radio wen	8/31/2019 2:41 PM
57	NOAA radio, internet, westessexnow.com	8/31/2019 1:33 PM
58	I only picked 3.... Radio, TV news and newspapers	8/31/2019 12:26 PM
59	Text, phone	8/30/2019 7:26 PM
60	Internet, social media, tv	8/30/2019 4:00 PM
61	Websites. Community notifications. Social media	8/30/2019 3:28 PM
62	Text, email internet	8/30/2019 3:26 PM
63	Internet and social media	8/30/2019 2:23 PM
64	TV News, Municpal email and internet	8/30/2019 2:14 PM
65	Municipal websites Reverse 911 County websites Social media	8/30/2019 11:21 AM
66	Social media, county website, TV news	8/30/2019 11:07 AM
67	internet social media police info calls	8/30/2019 10:42 AM
68	Weather channel	8/30/2019 10:25 AM
69	Internet, Tv News, public library	8/30/2019 10:18 AM
70	Municipal information News Social media	8/30/2019 10:05 AM
71	Reverse 911, news, social media.	8/30/2019 9:45 AM
72	Social Media, TV News, Newspaper	8/30/2019 9:31 AM
73	Internet News Websites	8/30/2019 9:09 AM
74	The three I selected	8/30/2019 9:06 AM

75	TV radio internet	8/30/2019 9:06 AM
76	Internet	8/30/2019 8:55 AM
77	Social media, tv and radio news	8/30/2019 8:09 AM
78	Municipal media	8/29/2019 9:00 PM
79	TV News, internet, social media	8/29/2019 6:51 PM
80	Police/Fire TV Internet	8/29/2019 4:45 PM
81	Reverse 911	8/29/2019 3:54 PM
82	News website, social media, tow. Website	8/28/2019 11:21 PM
83	Tv, social media, radio	8/28/2019 1:32 PM
84	Internet	8/28/2019 12:31 PM
85	Nixle news and social media	8/28/2019 11:50 AM
86	TV, Internet, Muni email	8/28/2019 11:03 AM
87	Social media, newspaper, TV	8/28/2019 10:40 AM
88	Internet, social media, radio	8/28/2019 10:27 AM
89	Social media, TV News, Local email	8/28/2019 10:12 AM
90	internet, social media, tv news	8/5/2019 3:31 PM
91	County OEM, Social media sites, N.Y. news stations	8/5/2019 11:37 AM
92	Police	6/20/2019 2:38 PM

Q8 Which of the following steps has your household taken to prepare for a local hazard event? Check all that apply.

Answered: 102 Skipped: 0

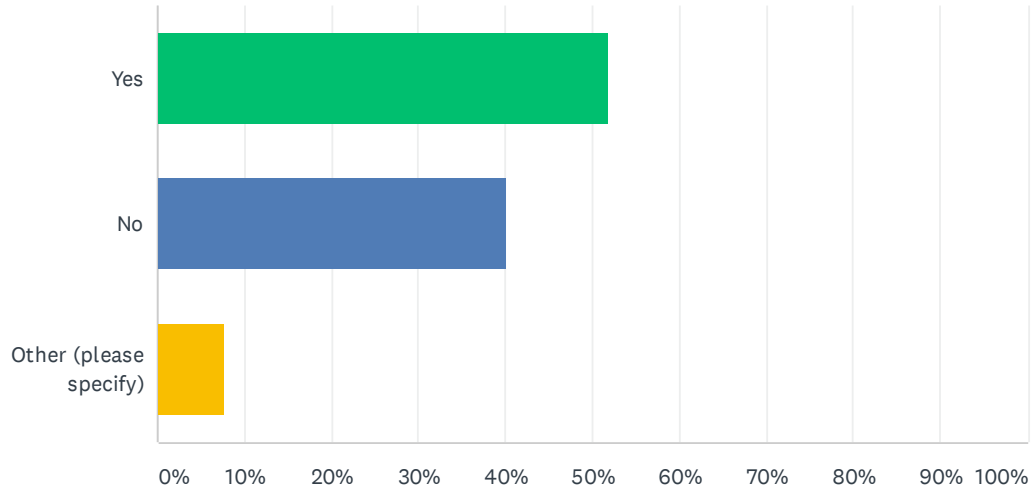


ANSWER CHOICES	RESPONSES	
Received first aid/CPR training	46.08%	47
Made an emergency plan	27.45%	28
Designated a meeting place	26.47%	27
Identified utility shutoffs	50.98%	52
Prepared a disaster supply kit	22.55%	23
Installed smoke detectors on each level of home	82.35%	84
Stored food and water	49.02%	50
Stored flashlights and batteries	81.37%	83
Stored a battery-operated radio	41.18%	42
Stored a fire extinguisher	68.63%	70
Stored medical supplies (first aid kit, medications)	56.86%	58
Registered to receive emergency alerts (i.e. NIXLE)	60.78%	62
Purchased additional insurance to cover losses (i.e. flood insurance)	23.53%	24
Identified the location of the nearest emergency shelter	15.69%	16
Received emergency preparedness information from a government source	27.45%	28
Other (please specify)	8.82%	9
Total Respondents: 102		

#	OTHER (PLEASE SPECIFY)	DATE
1	Installed a generator	9/25/2019 12:28 PM
2	bought a portable generator for power	9/24/2019 9:59 PM
3	Generator	9/19/2019 10:15 PM
4	Stored manual-crank/solar operated radio, flashlight. Stored sleeping bags & Go-Kit. Stored critical family documents in quick-access location. Keep vehicle tuned, fueled and spare fluids in trunk. Keep shovel, axe & blankets in vehicle. Backup of PC's on 4 terabite portable drive. Stored fully charged portable USB battery packs.	9/11/2019 9:24 PM
5	Generator	9/11/2019 4:51 PM
6	Essex County ARES coordinator. Have taken ARES emcomm training and online FEMA courses	9/10/2019 10:45 PM
7	Whole house generator	9/3/2019 11:06 AM
8	Took CERT course	8/30/2019 3:26 PM
9	Generator	8/28/2019 12:31 PM

Q9 In the past, has your home been damaged by a hazard event? For example, the basement of your home flooded and damaged the hot water heater.

Answered: 102 Skipped: 0

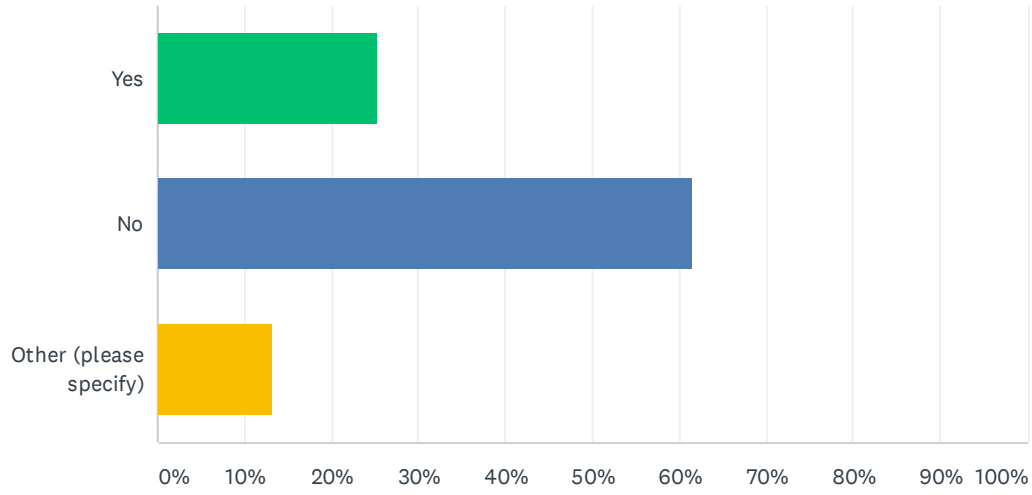


ANSWER CHOICES	RESPONSES	
Yes	51.96%	53
No	40.20%	41
Other (please specify)	7.84%	8
TOTAL		102

#	OTHER (PLEASE SPECIFY)	DATE
1	flodded, but didnt do major harm	9/24/2019 9:59 PM
2	no	9/19/2019 10:15 PM
3	Tree fall	9/3/2019 2:32 PM
4	Extreme erosion due to water run off	8/30/2019 8:55 AM
5	Flooding / tree damage	8/30/2019 7:47 AM
6	Minor damage due to Super Storm Sandy	8/29/2019 4:45 PM
7	Water in basement- but not to levels that damaged the foundation or utilities	8/28/2019 11:50 AM
8	< 1 inch of water in basement during flash flooding/storm	8/28/2019 10:12 AM

Q10 If you answered "yes" to question #10, did you report the damages to your local police or fire departments or to an emergency management agency?

Answered: 83 Skipped: 19



ANSWER CHOICES	RESPONSES	
Yes	25.30%	21
No	61.45%	51
Other (please specify)	13.25%	11
TOTAL		83

#	OTHER (PLEASE SPECIFY)	DATE
1	n/a	9/25/2019 12:28 PM
2	Insurance company and fema	9/24/2019 6:24 PM
3	N/a	9/23/2019 7:17 PM
4	never had damage	9/19/2019 10:15 PM
5	N/A	9/19/2019 4:15 PM
6	Basement flooding in hurricane Irene was reported to fema, but other flooding was not	9/5/2019 5:33 AM
7	Na	9/4/2019 5:00 PM
8	Discussed with the town due to sewer overflow	9/1/2019 10:23 AM
9	Insurance company. They didn't cover the damage. FEMA-no help at all.	8/30/2019 11:21 AM
10	Na	8/28/2019 11:21 PM
11	N/A	8/5/2019 11:37 AM

Q11 If you answered "no" to question #10, why did you not report the damages?

Answered: 62 Skipped: 40

#	RESPONSES	DATE
1	Did not feel the need to do so.	11/19/2019 10:46 AM
2	Not applicable	10/7/2019 8:00 AM
3	Handled it ourselves...	10/4/2019 10:27 AM
4	I just reported it to my insurance company.	9/25/2019 3:47 PM
5	Not covered	9/25/2019 7:18 AM
6	nothing for them to do. I was able to pump out the water myself with the sump pump and generator	9/24/2019 9:59 PM
7	N/a	9/24/2019 3:43 PM
8	I reported	9/24/2019 2:41 PM
9	not applicable	9/24/2019 12:08 PM
10	mmmmmmmmmm	9/24/2019 11:52 AM
11	N/a	9/23/2019 7:17 PM
12	there were none	9/19/2019 10:15 PM
13	Never happened	9/19/2019 6:47 PM
14	N/A	9/19/2019 4:15 PM
15	Did not think I should	9/13/2019 5:59 PM
16	N/A	9/12/2019 6:22 PM
17	Didn’t know to	9/11/2019 10:48 PM
18	Didn't occur to us, we took care of all repairs and clean-up ourselves without insurance.	9/11/2019 9:24 PM
19	n/a	9/11/2019 9:19 PM
20	Reported damage to insurance company.	9/11/2019 5:41 PM
21	Trees down	9/11/2019 11:08 AM
22	reported to insurance. didn't know you report to police and fire as procedure.	9/11/2019 8:32 AM
23	Reported to insurance	9/10/2019 8:21 PM
24	What are the police going to do about basement flooding?	9/5/2019 5:33 AM
25	What would they have done- we replaced the water heater and cleaned the basement	9/4/2019 10:53 AM
26	Did not think too	9/3/2019 11:07 PM
27	The hazard was a non emergency and personal damage	9/3/2019 5:15 PM
28	Not pertinent	9/3/2019 2:32 PM
29	N/A	9/3/2019 2:16 PM
30	Didn't think it was necessary as it was reported to insurance company.	9/3/2019 10:51 AM
31	Didn’t know I could	9/2/2019 7:07 AM
32	Minimal damage	9/1/2019 4:40 PM
33	None occurred	8/31/2019 7:54 PM
34	Not sure what reporting would do.	8/31/2019 12:26 PM
35	Dealt directly with insurance	8/30/2019 7:26 PM
36	Didn’t know we were supposed to	8/30/2019 4:00 PM
37	No damages	8/30/2019 2:23 PM

38	Police or Fire Department don’t have anything to do with flood damage. However I have nothing for praise for both departments who do their best under very difficult circumstances , especially the firefighters who are volunteers	8/30/2019 11:21 AM
39	Minimal damage to carpet and basement flooring	8/30/2019 11:07 AM
40	tree fell on shed during hurricane sandi	8/30/2019 10:42 AM
41	No damage	8/30/2019 10:25 AM
42	Didn't know I could	8/30/2019 10:18 AM
43	N/a	8/30/2019 10:05 AM
44	Would not have made a difference. Police dept busy with community.	8/30/2019 9:45 AM
45	N/A	8/30/2019 9:31 AM
46	They had more important emergencies to tend to	8/30/2019 9:09 AM
47	Reported	8/30/2019 9:06 AM
48	No one else was going to pay for the damage	8/30/2019 9:06 AM
49	Didn’t know who to report it to	8/30/2019 9:06 AM
50	Na	8/30/2019 8:09 AM
51	All my family and neighbors did was fix the damage and call the insurance company. The emergency services in my town can’t catch car thieves why would I trust them to help me during a disaster.	8/29/2019 6:51 PM
52	Minor and more concerned about my neighborhood and the greater community	8/29/2019 4:45 PM
53	Addressed situation myself.	8/29/2019 3:54 PM
54	Didn’t have	8/28/2019 11:21 PM
55	?	8/28/2019 1:32 PM
56	No Damage	8/28/2019 12:31 PM
57	The damage was minor	8/28/2019 11:50 AM
58	NA	8/28/2019 11:03 AM
59	NA	8/28/2019 10:40 AM
60	*3 years in the home and only happened one time during an excessive and rapid rain storm	8/28/2019 10:12 AM
61	No damage	8/5/2019 11:37 AM
62	N/A	6/20/2019 2:38 PM

Q12 Please explain the damage your structure sustained and when it occurred.

Answered: 72 Skipped: 30

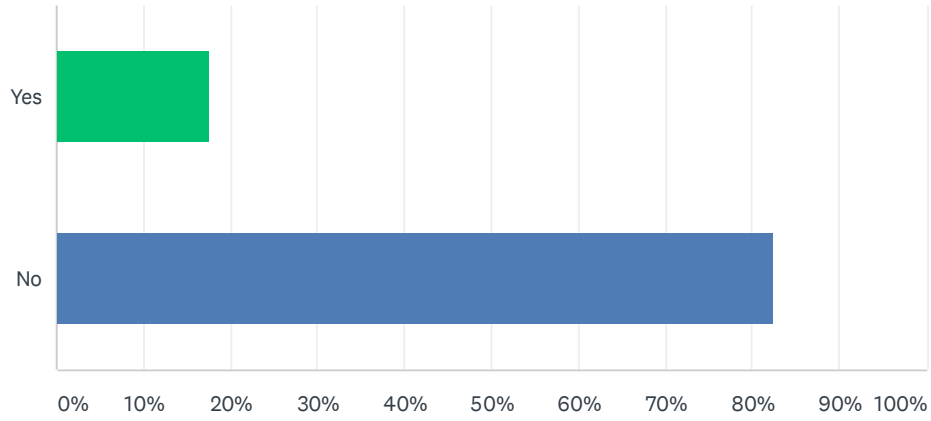
#	RESPONSES	DATE
1	This past summer, a violent thunderstorm brought a neighbor’s huge tree down onto our fence.	11/19/2019 10:46 AM
2	n/a	10/7/2019 8:00 AM
3	Neighbor's tree fell on our roof. Just damaged some shingles and the siding. No holes.	9/25/2019 3:47 PM
4	Roof damage from trees	9/25/2019 7:18 AM
5	no structural damage, just a lot of ruined items	9/24/2019 9:59 PM
6	Flood. Loss of hot water heater & furnace	9/24/2019 9:17 PM
7	After Irene in 2011....entire basement (furnace, hot water heater, sump pump) 3x' water on first floor	9/24/2019 6:24 PM
8	Flood damage first floor and basement	9/24/2019 3:43 PM
9	No structural damage, damage to heating unit and hot water heater	9/24/2019 3:43 PM
10	Flooding to first floor	9/24/2019 2:41 PM
11	n/a	9/24/2019 12:08 PM
12	mmmmmmmmm	9/24/2019 11:52 AM
13	N/a	9/23/2019 7:17 PM
14	N/A	9/19/2019 4:15 PM
15	4 feet water in basement, resulted loss water heater, refrigerator, boiler, HVAC system and personal items	9/17/2019 7:31 AM
16	Tree fell on roof and into house.	9/12/2019 6:22 PM
17	A tree fell on our house	9/11/2019 10:48 PM
18	Lost large storage shed during Sandy by trees falling, landscape damage, basement flooding - lost equipment and stored items. Lost window trim and other pieces of house siding, window screen damage.	9/11/2019 9:24 PM
19	August 2011 - our basement flooded with 39" of river water from the Rahway River after Hurricane Irene.	9/11/2019 9:19 PM
20	Basement was flooded. Down to studs.	9/11/2019 7:05 PM
21	Tree down across lawn. Tree branch on garage roof. Water damage to porch.	9/11/2019 5:41 PM
22	Basement flooded - Hurricane Irene	9/11/2019 4:51 PM
23	Flooding in the yard and in the basement in both Hurricanes Floyd and Irene	9/11/2019 12:13 PM
24	Trees down ripped off a porch	9/11/2019 11:08 AM
25	Wet wood	9/11/2019 8:32 AM
26	Tree down	9/10/2019 8:21 PM
27	Basement flooding resulted in stains, damaged property and damaged water heater.	9/5/2019 5:33 AM
28	Go away	9/4/2019 10:53 AM
29	Water seepage from Toney's Brook, coming in under foundation of home at front door. Home built as a redevelopment project, and the brook still runs under our property.	9/4/2019 8:11 AM
30	Wet basement, lost roof tiles	9/3/2019 11:07 PM
31	Flood water in house 2014	9/3/2019 5:15 PM
32	Roof damage	9/3/2019 2:32 PM
33	N/A	9/3/2019 2:16 PM
34	Neighbor trees totaled the patio, our tree totaled the garage and damaged cars and patio	9/3/2019 11:06 AM

35	Minor damage to basement.	9/3/2019 10:51 AM
36	Water damage in basement.	9/2/2019 7:07 AM
37	Basement flooding, August 2018	9/1/2019 4:40 PM
38	Flooding occurs during heavy rains and flash floods due to sewers in front of house overflowing	9/1/2019 10:23 AM
39	N/a	8/31/2019 7:54 PM
40	Basement n first floor destroyed n all eqiuient. Hot water furnace Sc	8/31/2019 2:41 PM
41	No structural damage. Replaced sheetrock a few times, loss of furniture and other items. Ongoing since the late 1960's.	8/31/2019 12:26 PM
42	Roof, basement	8/30/2019 7:26 PM
43	While basement flooded. Needed new heating, water heater, washer, dryer, sheet rock. Lost everything stored in basement.	8/30/2019 4:00 PM
44	None	8/30/2019 2:23 PM
45	Had to redo the entire basement which is a finished area	8/30/2019 2:14 PM
46	Crack in basement floor (still there) and loss of garage door in 2011.	8/30/2019 11:21 AM
47	Flooding damage to carpet on basement floor	8/30/2019 11:07 AM
48	destroyed shed	8/30/2019 10:42 AM
49	None	8/30/2019 10:25 AM
50	Hail damage to deck & siding	8/30/2019 10:18 AM
51	Irene - entire first level 16 inches of water. Had to gut walls- water, gas furnace and appliances all had to be replaced. Furniture etc	8/30/2019 10:05 AM
52	Complete damage to basement that was primary family living space that had significant custom renovation. Well over $100,000 in damage.	8/30/2019 9:45 AM
53	2 ft of flooding in basement	8/30/2019 9:31 AM
54	Pool overflowed and filled with mud coming from town pool property. The liner came off the pool	8/30/2019 9:09 AM
55	Finished lower level destroyed by water 8/11/18	8/30/2019 9:06 AM
56	Basement flooding from water runoff from pse&g right of way	8/30/2019 9:06 AM
57	Basement flooded and damaged a lot of items in the basement much of which had to be replaced	8/30/2019 9:06 AM
58	Erosion around base of property and fence. Sinking of yard	8/30/2019 8:55 AM
59	Tree fell, hit side of house, broke windows and totaled vehicle	8/30/2019 8:09 AM
60	Hurricane Sandy tree came thru roof far into the house	8/30/2019 7:47 AM
61	Flooding in my home and trees falling on my home because my town refuses to let me cut down dead trees since they have to bow down to the Shade Tree Commission.	8/29/2019 6:51 PM
62	Some siding and down trees & LARGE limbs.	8/29/2019 4:45 PM
63	Water in basement when sump pump malfunctioned	8/29/2019 3:54 PM
64	Down tree did not hit house	8/28/2019 11:21 PM
65	Wet basement	8/28/2019 1:32 PM
66	None	8/28/2019 12:31 PM
67	Water excess- mop and pail - loss of some shelving and other furniture-	8/28/2019 11:50 AM
68	NA	8/28/2019 11:03 AM
69	NA	8/28/2019 10:40 AM

70	Minimal damage. Clean up with mop and replace baseboard.	8/28/2019 10:12 AM
71	No Damage	8/5/2019 11:37 AM
72	Flood in basement	6/20/2019 2:38 PM

Q13 To the best of your knowledge, is your property located in a designated floodplain? If you do not know, click here to find out.

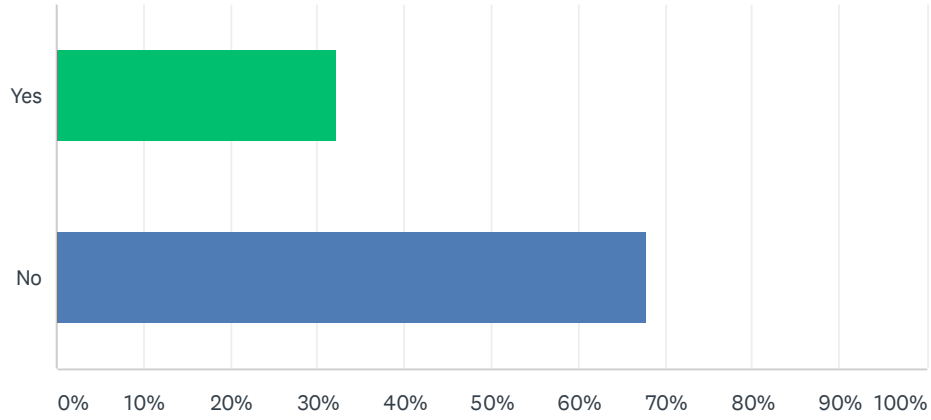
Answered: 102 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	17.65%	18
No	82.35%	84
TOTAL		102

Q14 If your property is in the floodplain, do you have flood insurance?

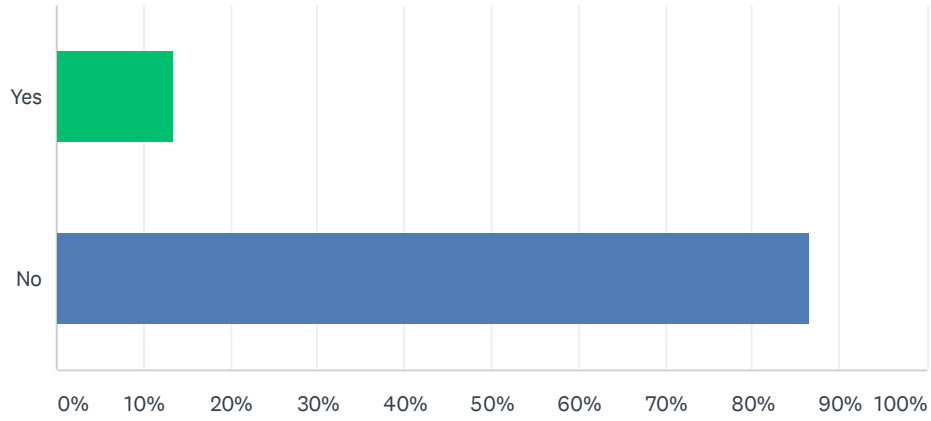
Answered: 62 Skipped: 40



ANSWER CHOICES	RESPONSES	
Yes	32.26%	20
No	67.74%	42
TOTAL		62

Q15 If your property is located outside of the floodplain, do you have flood insurance?

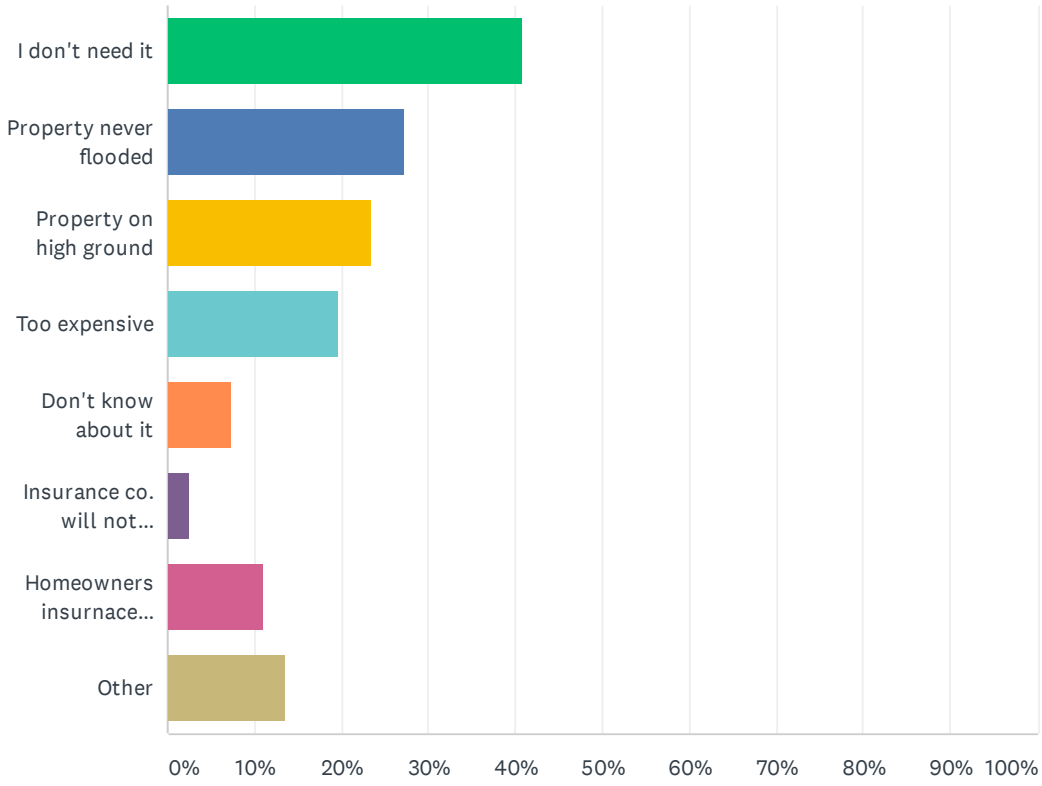
Answered: 90 Skipped: 12



ANSWER CHOICES	RESPONSES	
Yes	13.33%	12
No	86.67%	78
TOTAL		90

Q16 If you do NOT have flood insurance, what is the primary reason? Check all that apply.

Answered: 81 Skipped: 21

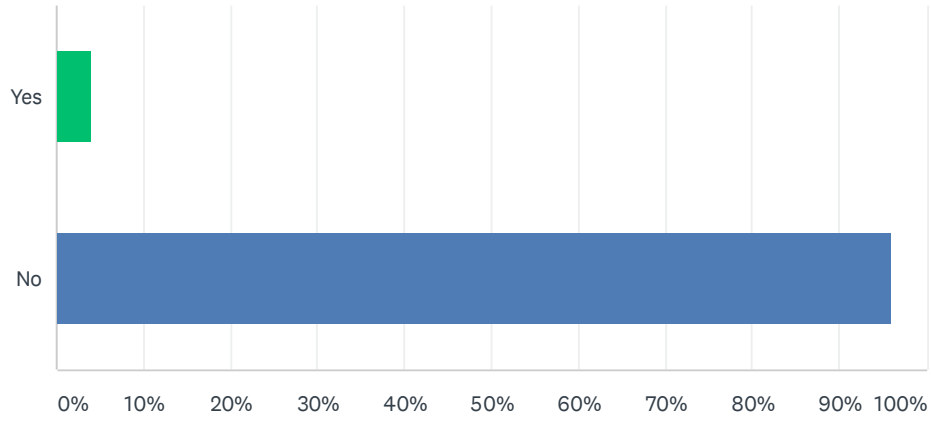


ANSWER CHOICES	RESPONSES	
I don't need it	40.74%	33
Property never flooded	27.16%	22
Property on high ground	23.46%	19
Too expensive	19.75%	16
Don't know about it	7.41%	6
Insurance co. will not provide	2.47%	2
Homeowners insurnace covers me	11.11%	9
Other	13.58%	11
Total Respondents: 81		

#	OTHER (PLEASE SPECIFY)	DATE
1	I have it.	10/7/2019 8:00 AM
2	I dont build in flood plains	9/25/2019 7:18 AM
3	We have flood insurance	9/24/2019 3:43 PM
4	renter	9/24/2019 11:52 AM
5	I have flood insurance	9/11/2019 7:05 PM
6	Optional	9/3/2019 2:16 PM
7	We had it but it did not cover our situation since it was just our house	9/1/2019 10:23 AM
8	I have it	8/30/2019 7:26 PM
9	N/a	8/30/2019 10:05 AM
10	We are not in a flood zone. Did not expect to have flooding issuea	8/30/2019 9:09 AM
11	I now rent - the new apartment is in a Floodplain	8/30/2019 7:47 AM

Q17 Do you or did you have problems getting homeowners/renters insurance due to risks from natural hazards?

Answered: 100 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	4.00%	4
No	96.00%	96
TOTAL		100

Q18 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: 15 Skipped: 87

#	RESPONSES	DATE
1	I had trouble getting insurance because we have Aluminum wiring, not related to natural disasters.	9/25/2019 3:47 PM
2	Floods	9/24/2019 3:43 PM
3	mmmmmmmmmm	9/24/2019 11:52 AM
4	N/a	9/23/2019 7:17 PM
5	N/A	9/19/2019 4:15 PM
6	N/A	9/12/2019 6:22 PM
7	Tropical Storm Irene	9/11/2019 7:05 PM
8	NA	9/10/2019 8:21 PM
9	N/a	8/30/2019 7:26 PM
10	None	8/30/2019 10:25 AM
11	N/a	8/30/2019 10:05 AM
12	Difficult and expensive to find companies to cover flood. Home was rezoned as flood area since purchase which has created many hundreds of thousands of dollars of property value loss.	8/30/2019 9:45 AM
13	They indicated that my home is at risk to flooding due to severe flooding because sewers are never cleaned and always back up.	8/29/2019 6:51 PM
14	Na	8/28/2019 11:21 PM
15	None	8/28/2019 12:31 PM

Q19 Please identify any specific vulnerabilities that you are aware of in Essex County (e.g. floodprone areas or specific properties, critical facilities that lack backup power, etc.). Please list street names and other specific identifiers if possible.

Answered: 66 Skipped: 36

#	RESPONSES	DATE
1	Rainwater runoff is an issue. I would like to see porous materials used for all construction	10/7/2019 8:57 AM
2	None.	9/26/2019 10:48 AM
3	Ironbound section of Newark flooding, Rt 46 at the Passaic River Flooding in Fairfield	9/25/2019 3:40 PM
4	During Hurricane Sandy, gas stations lacked generators.	9/25/2019 12:37 PM
5	Homes built on farmland that routinely flooded in Fairfield..	9/25/2019 7:24 AM
6	I live in Maplewood and work in Newark. The improvement to South Orange Avenue has been amazing, but Newark is a disaster when it rains and the streets flood. Areas in the downtown and surrounding areas	9/24/2019 10:15 PM
7	Passaic River	9/24/2019 9:21 PM
8	Matt Drive in Fairfield. The Passaic river has not been cleaned of debris in at least 2 years. We were told at a town meeting in January 2019 they were waiting for the banks to be dry so equipment could be brought in. It has been a very dry Summer, thus far nothing has been done to clean the river....25 years ago when we were in a drought situation like now, I could walk across the Passaic river at some points (like Two Bridges rd)...at the hydrograph at Pine Brook we measured <4' . Now ...with no rain we measure 12'....most blame the Pompton Gates for this and actually flooding during storms....the "Official Studies say "no", but those of us who have live here for decade disagree...ever since those gates were built and became operational to protect a few hundred "important people" upstream, we- the downstreamers gave suffered.	9/24/2019 6:47 PM
9	Passaic River	9/24/2019 4:15 PM
10	I believe the Passaic River needs to be cleaned. Lots if debris that needs to be removed.	9/24/2019 3:49 PM
11	Fairfield/pine brook flooding. The river needs to be cleaned out in Fairfield	9/24/2019 3:46 PM
12	Matt drive in Fairfield dead end prone to flooding house basement first floor and street street food first making the deadend with no escape other then walking through the water	9/24/2019 2:47 PM
13	Steep, curved roads, old power lines and water lines not deep enough	9/23/2019 7:52 PM
14	Flooding anywhere near the Passaic River; overgrown trees and tree branches near power lines and roads	9/19/2019 4:24 PM
15	Tony’s Brook, Montclair	9/19/2019 12:00 PM
16	Greenwood dr, and Lower south Mountain area millburn, taylor park millburn, downtown millburn, Washington section millburn	9/17/2019 7:36 AM
17	none	9/11/2019 10:20 PM
18	The South Mountain section of Millburn, NJ is extremely low-lying. Protection to prevent the Rahway River from flooding its banks and emptying into this neighborhood is poor.	9/11/2019 9:27 PM
19	Storm sewers that are covered in debris particularly in the South Mountain reservation.	9/11/2019 8:15 PM
20	Orange Reservoir Rahway River	9/11/2019 7:25 PM
21	The dam in the South Mountain Reservation.	9/11/2019 6:11 PM
22	Haran Circle in Millburn - Rahway River - debris accumulation	9/11/2019 4:55 PM
23	Storm drain creek bed (for lack of a better term) that weaves through the Glenwood section on Short Hills is prone to flooding. The section from Baltusrol to Glenwood roads is especially problematic and has lead to flooding and erosion of garage foundations oh houses on Meadowbrook Rd.	9/11/2019 1:58 PM
24	Rahway River branches	9/11/2019 12:21 PM
25	Glen Ave./Cypress/Wyoming and Millburn Ave are prone to water backing up and coming back out of the storm water line.	9/11/2019 8:37 AM
26	The heavily wooded suburbs of the county have power distribution that is not at all resilient to severe weather. Outages occur often and can last for days at a time.	9/10/2019 10:51 PM

27	Passaic river (horseneck rd, hook mountain rd, Willowbrook mall and 46)	9/10/2019 8:38 PM
28	Above ground electrical lines continue to cause major problems even during minor storms.	9/6/2019 9:11 AM
29	Pls see below	9/4/2019 12:09 PM
30	Corruption in the county executives office	9/4/2019 11:00 AM
31	Lack of fallout shelter plans on Chancellor Ave and during the Sandy Storms Churches were the source of contact when the local park should of became distribution centers. The items for the community was shared with church personnel and the active community leadership was blocked out from accessing the information. All the diatrict leaders in both parties should have training and be involved	9/3/2019 5:28 PM
32	Route 21, Ironbound (south st), Belleville ave	9/3/2019 3:52 PM
33	na	9/3/2019 12:36 PM
34	Trees that are not cared for by owners and storm drain flooding and town trees not cared for. Rensselaer Rd, Roseland Avenue and Grover Cleveland park/Runnymede Rd (tree hanging on wires over road)	9/3/2019 11:14 AM
35	Damn in the area	9/1/2019 4:41 PM
36	Downed trees in the Passaic and Rockaway River. Beatties Dam in Little Falls	9/1/2019 11:02 AM
37	Bloomfield Ave becomes a river	9/1/2019 7:39 AM
38	River needs to be deredged dams should not be opened.	8/31/2019 2:46 PM
39	Newark, route 21, fairfield, verona Park, Brookside Park in Bloomfield	8/31/2019 1:37 PM
40	Passaic River on bloomfield Ave at pine Brook border. Passaic River everywhere.	8/31/2019 12:42 PM
41	Power outages, flooding	8/30/2019 7:29 PM
42	Hilltop properties causing flooding below. Bloomfield Ave in Caldwell now flooding like it never did before	8/30/2019 3:33 PM
43	Grover Cleveland Park pond floods up over the walkway	8/30/2019 3:31 PM
44	Bloomfield avenue caldwell	8/30/2019 2:27 PM
45	Fairfield and Little Falls are still in jeopardy of flooding again since they did nothing to the Passaic River cleanup.	8/30/2019 2:23 PM
46	Anywhere near the Passaic River. Pier Lane which is a county road. The pumping station on Little Falls Road. The bottom end of Martin's Lane. Camp Lane. Little Falls Road. Riveredge Drive. Brook Street. Broadway Lane. Plymouth Street. Commerce Road. These are just off the top of my head. I am are the town can give you a complete list (Fairfield)	8/30/2019 11:57 AM
47	floodprone areas (land and infrastructure) along I-80 and US-46 (Wayne, Fairfield, Little Falls)	8/30/2019 11:09 AM
48	Fairfield - flooding. Clean the river of trees	8/30/2019 10:09 AM
49	Flooding of Passaic river is constant stressor. On top of opening of flood gate of Ramapo river. Not only have I lost in excess of $250,000 in home value, we live in fear of flood in future.	8/30/2019 9:52 AM
50	Stream overflows on Howland Circle and floods the street and properties. This only began happening in the last 3 years	8/30/2019 9:20 AM
51	?	8/30/2019 9:11 AM
52	Piermont Place insufficient public sewer capacity	8/30/2019 9:09 AM
53	Easement around property is not maintained by county and we are not allowed to do any maintenance	8/30/2019 9:00 AM
54	Dangerous tree limbs over roadways. Mountain Ave, the Greenbrooks in N Caldwell/Fairfield. Some of the branches are dead, have no foliage and are likely to come down in a storm, causing bodily and property damage as well as power outages.	8/30/2019 8:20 AM
55	At some point - all of West Essex is going to need to have the utility wires placed underground.	8/30/2019 7:54 AM

	Otherwise - every single storm deals with wires and trees down. That's not hyperbole.	
56	The area around the Passaic River floods every Spring. They do a terrible job of clearing county and municipal roads when it snows because they are too cheap which in turn leads to dangerous roads and car accidents. Particularly on Bloomfield and Eagle Rock Avenue, as well as Route 280	8/29/2019 7:01 PM
57	Main Street in Belleville, Millburn Avenue in Millburn, Cherry Lane in West Orange, Broad Street in Bloomfield, Saint Barnabas Ambulatory Care Center needs backup power in parking garage elevators.	8/29/2019 3:59 PM
58	Flooding, Ill-maintained streets that flood, particularly under train trusses in s orange and Millburn	8/28/2019 11:26 PM
59	?	8/28/2019 1:35 PM
60	Brook side Terrace Verona	8/28/2019 12:34 PM
61	Peckman River banks are expanding- flood zones have expanded. Development in North Caldwell and Cedar Grove are accelerating flooding. Verona township water service building is now subject to flooding regularly	8/28/2019 11:57 AM
62	Floods in Newark, along Passaic river, and along smaller rivers.	8/28/2019 10:43 AM
63	Infrastructure failure/decay, flood prone areas due to over population, too much surface area doesn't allow for water seepage into ground	8/28/2019 10:30 AM
64	na	8/28/2019 10:19 AM
65	Flooding in Fairfield, localized flooding on streets throughout Essex County	8/5/2019 11:44 AM
66	Flood	6/20/2019 2:39 PM

Q20 Please identify any specific vulnerabilities that you area aware of in the municipality you live in (e.g. floodprone areas or specific properties, critical facilities that lack backup power, etc.). Please list street names and other specific identifiers if possible.

Answered: 57 Skipped: 45

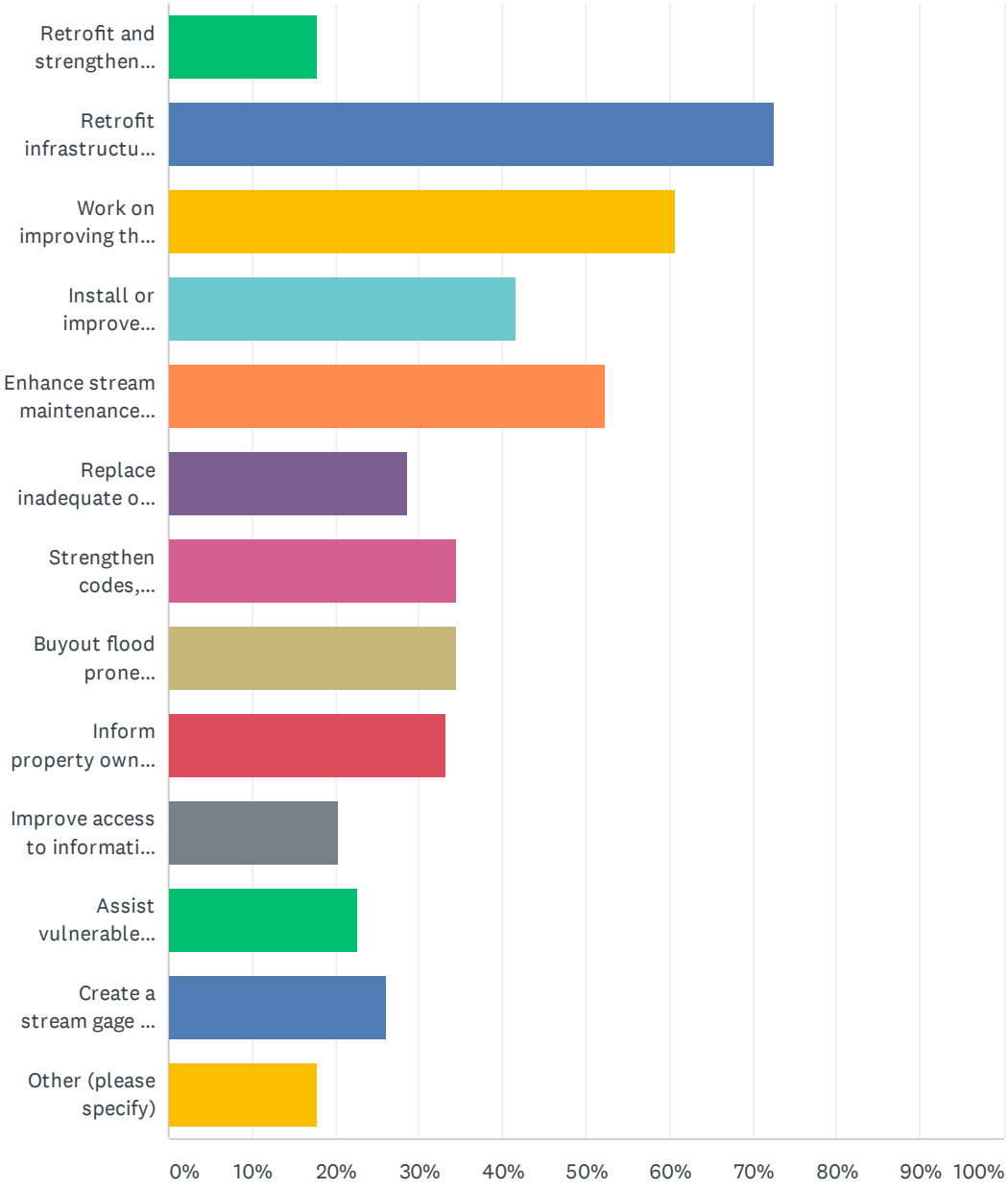
#	RESPONSES	DATE
1	There are vulnerabilities associated with the river in Soverel Park, East Orange	10/7/2019 8:57 AM
2	Lots of new developments are going to be built soon. I don't think our volunteer fire department will be able to manage.	9/26/2019 10:48 AM
3	Street Flooding, Passaic River Flooding, Highway Flooding.	9/25/2019 3:40 PM
4	Beadie Dam needs a flood gate.	9/25/2019 7:24 AM
5	No real issues that have come up in Maplewood except for the part of Ridgewood Road that goes into Millburn. At the borderline there is a train overpass which always floods.	9/24/2019 10:15 PM
6	Passaic River	9/24/2019 9:21 PM
7	The Passaic river is loaded with 2 years of downed trees and debris that has been ignored...flow rate in parts that used to flow freely have become stagnated. (I'm an artist who has painted often along the Passaic so I'm pretty familiar with it.....oh ..I forgot to mention....Beatties Damn...built as a power source last century for I believe long defunct paper mill...slows the Passaic up tremendously...	9/24/2019 6:47 PM
8	Along Passaic river	9/24/2019 4:15 PM
9	Addison Drive flooding in the field and homes immediately in the vicinity	9/24/2019 3:46 PM
10	Fairfield flooded homes and houses from the uncleaned Passaic river thelat never gets dredged and doesn't have any water flow from downed trees	9/24/2019 2:47 PM
11	Steep, curved roads, old power lines and water lines not deep enough	9/23/2019 7:52 PM
12	Flooding anywhere near the Passaic River; overgrown trees and tree branches near power lines and roads	9/19/2019 4:24 PM
13	North Fullerton Street, Montclair	9/19/2019 12:00 PM
14	Where the 2 branches of the Rahway river meet at lower south Mountain area millburn. And the joint meeting all over flow together	9/17/2019 7:36 AM
15	Bottom of cypress street from Rahway river, fudders former shoe shop floods from river, abandoned gas station on edge of river should be used for stormwater, south mountain neighborhood floods during storms	9/12/2019 6:39 PM
16	none	9/11/2019 10:20 PM
17	see my answer to #19 above.	9/11/2019 9:27 PM
18	In Milburn Township Backyard areas between Greenwood Drive and Ridgewood Road from Haran Circle to Beech Terrace.	9/11/2019 7:25 PM
19	Unaware of any.	9/11/2019 6:11 PM
20	Storm drain creek bed (for lack of a better term) that weaves through the Glenwood section on Short Hills is prone to flooding. The section from Baltusrol to Glenwood roads is especially problematic and has lead to flooding and erosion of garage foundations oh houses on Meadowbrook Rd.	9/11/2019 1:58 PM
21	Downtown Millburn and the South Mountain neighborhood are prone to flooding	9/11/2019 12:21 PM
22	I don't think that there is a comprehensive generator list of Millburn assets.	9/11/2019 8:37 AM
23	The downtown has flooded. Some areas in my neighborhood are flood prone, such as Woodland Rd (Short Hills)	9/10/2019 10:51 PM
24	Passaic river (horseneck rd, hook mountain rd, Willowbrook mall and 46)	9/10/2019 8:38 PM
25	All the new development in Montclair creates more street/property/home flooding. There’s just nowhere for the water to go, so it’s forging rivers through yards and streets that weren’t made to sustain the rising amount of water falling. Someone should talk to the people in Montclair about this - there are plenty of first hand stories...yet the development and redevelopment continues. I believe it’s only going to get worse.	9/4/2019 12:09 PM

26	Corruption in the town council - bribery	9/4/2019 11:00 AM
27	Lack of back up services and trained group leadership	9/3/2019 5:28 PM
28	Belleville ave	9/3/2019 3:52 PM
29	na	9/3/2019 12:36 PM
30	Trees that are not cared for by owners and storm drain flooding and town trees not cared for. Rensselaer Rd, Roseland Avenue and Grover Cleveland park/Runnymede Rd (tree hanging on wires over road	9/3/2019 11:14 AM
31	Upper nj don't open flood gates that impact our area	8/31/2019 2:46 PM
32	Not sure	8/31/2019 1:37 PM
33	Passaic River prevents family from reaching me in case of emergency. Bloomfield Ave at Pine Brook border	8/31/2019 12:42 PM
34	Montgomery Rd- power outages	8/30/2019 7:29 PM
35	Bloomfield ave caldwell	8/30/2019 2:27 PM
36	No way in or out when the river floods, all 4 directions are affected. From the Willowbrook mall to montville on 46 and Two bridges to passaic ave. All flood	8/30/2019 2:23 PM
37	See above	8/30/2019 11:57 AM
38	Flooded roads/over-topped bridges (Bloomfield Ave, local roads with minor streams)	8/30/2019 11:09 AM
39	Did	8/30/2019 10:09 AM
40	Most areas of town are in flood zone. When home was purchased it was a minimal threat. It is now a constant threat. Have had several floods that forced evacuations in area.	8/30/2019 9:52 AM
41	Howland Circle, West caldwell. Stream overflows. Also more runoff from town pool into our property. Many dead trees that are hazardous in town lot next to 28 Howland Circle and also along the town pool fence parallel to Passaic avenue	8/30/2019 9:20 AM
42	Francine Ave in West Caldwell floods on the block that intersects Bloomfield Ave due to poor drainage. The whole neighborhood floods whenever it rains particularly heavy. Neighbors who've been around longer than I have said it's gotten considerably worse in recent years.	8/30/2019 9:15 AM
43	?	8/30/2019 9:11 AM
44	Dalewood Road, easement overflows. West view Rd water comes up from ground	8/30/2019 9:00 AM
45	Storm drains are not cleared proactively, water gets blocked and roads become flooded	8/30/2019 8:20 AM
46	Passaic, Bloomfield Avenues become streams that get closed off during most thunderstorms. You can check with police for verification. - Again all wires across the area are vulnerable to coming down.	8/30/2019 7:54 AM
47	Roseland and the county does a terrible job of cleaning snow off roads which leads to car accidents on Eagle Rock Avenue and Passaic Avenue. The power in the center of Roseland goes out all the time in a stiff breeze. Water clogs storm drains which leads to street flooding.	8/29/2019 7:01 PM
48	West Orange did provide some storm clean up if the home owner brought the garbage to the curb.	8/29/2019 4:53 PM
49	Ridgewood in Millburn, Burgdorff in Maplewood,	8/28/2019 11:26 PM
50	?	8/28/2019 1:35 PM
51	None	8/28/2019 12:34 PM
52	Brookside terrace- Ann. Street, cypress, summit road, wayland drive, sunset street, Derwent, my prospect Ave etc etc. too many area floodings to list	8/28/2019 11:57 AM
53	Areas along 3rd river	8/28/2019 10:43 AM
54	Infrastructure decay	8/28/2019 10:30 AM

55	Frequent power outages; floodprone areas near the Glen	8/28/2019 10:19 AM
56	Flooding of Dorsa Ave, Naylon Place due to Passic River cresting after major storms.	8/5/2019 11:44 AM
57	Gangs	6/20/2019 2:39 PM

Q21 What types of projects do you believe local, county, state, or federal government agencies could be doing to reduce the damage and disruption of disasters in Essex County? Select your top three choices.

Answered: 84 Skipped: 18

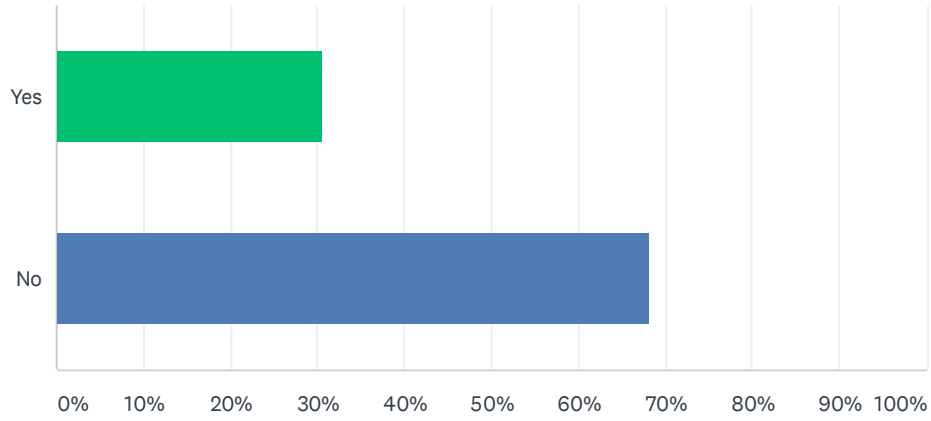


ANSWER CHOICES	RESPONSES	
Retrofit and strengthen essential facilities such as police, schools, and hospitals	17.86%	15
Retrofit infrastructure, such as elevating roadways and improving drainage systems	72.62%	61
Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)	60.71%	51
Install or improve protective structures, such as floodwalls, levees, bulkheads, and firebreaks	41.67%	35
Enhance stream maintenance programs/projects	52.38%	44
Replace inadequate or vulnerable bridges and causeways	28.57%	24
Strengthen codes, ordinances and plans to require higher hazard risk management standards and/or provide greater control over development in high hazard areas	34.52%	29
Buyout flood prone properties and maintain as open space	34.52%	29
Inform property owners of ways they can mitigate damage to their properties	33.33%	28
Improve access to information about hazard risks and high-hazard areas	20.24%	17
Assist vulnerable property owners with securing funding to mitigate their properties	22.62%	19
Create a stream gage and weather monitoring program to provide more accurate data and warnings	26.19%	22
Other (please specify)	17.86%	15
Total Respondents: 84		

#	OTHER (PLEASE SPECIFY)	DATE
1	Spillways! Dredging! 9they will tell you know...'we cannot bring up the contaminants" yet after Irene those contaminants covered our lawns, houses and trees 4' high.	9/24/2019 6:47 PM
2	Create or upgrade Emergency Service Restoration contracts with Verizon, Comcast, PSE&G and all other major utility & communication providers for Essex County residents that specifies terms for immediate deployment of supplemental service & repair teams during emergencies. Specify 7 figure fines for breach of these contracts to ensure mobilization is more attractive than paying the fines. Begin independent inspections of all private utility and communication equipment, facilities, etc.	9/11/2019 10:20 PM
3	Regularly maintain backyard drain pipes and grates.	9/11/2019 7:25 PM
4	Coordinate and fund a regional flood mitigation plan for the Rahway River	9/11/2019 12:21 PM
5	I don’t know if anyone is doing anything except development and building new, bigger, higher buildings.	9/4/2019 12:09 PM
6	Close the Essex county detention center	9/4/2019 11:00 AM
7	Improve communication by helping to create a community hib source	9/3/2019 5:28 PM
8	Stop building everywhere	9/1/2019 7:39 AM
9	Stop some of the building being done that is causing these floods	8/30/2019 3:33 PM
10	Stop new development when our infrastructure can’t handle what we already have!	8/30/2019 2:27 PM
11	Dig out the Passaic river from Montville to Little Falls. There are hundreds of dead trees and the river backs up even when we only get severe rain.	8/30/2019 2:23 PM
12	Clean Ann desnag Passaic River. Don’t allow any more building especially on lower ground and in flood prone areas. Common Sense! We have been talking about these things for 50 years! And nothing ever changes.	8/30/2019 11:57 AM
13	Work with AIA Newark and Suburban Architects to have professionals ready to help survey damaged structuresr	8/29/2019 4:53 PM
14	Orange Reservoir improvements to prevent flooding in Millburn	8/29/2019 3:59 PM
15	Repave roads	6/20/2019 2:39 PM

Q22 Do you feel that your municipality is doing enough towards flood prevention and mitigation or prevention/mitigation from other hazards?

Answered: 82 Skipped: 20



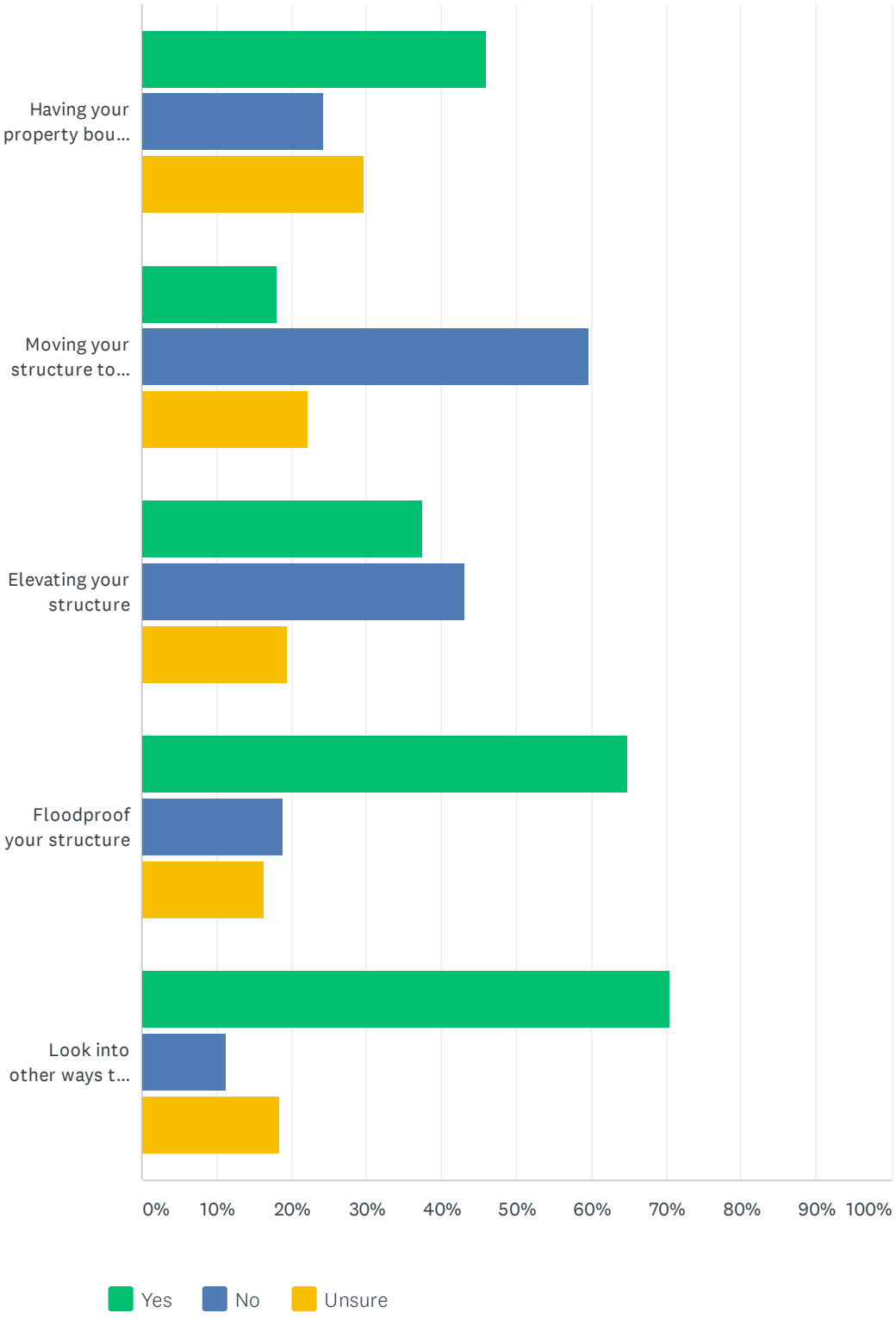
ANSWER CHOICES	RESPONSES	
Yes	30.49%	25
No	68.29%	56
TOTAL		82

#	PLEASE PROVIDE DETAILS FOR YOUR ANSWER.	DATE
1	I don't know that these issues are on the radar in Urban Essex.	10/7/2019 8:57 AM
2	Stop building in flood zone...	9/25/2019 7:24 AM
3	Never get any information from the elected officials in Maplewood concerning these issues. Thank GOD we have Joe D, he makes sure that the message gets out. We rely on him a lot by looking online at the websites he posts on to say about cooling stations when the heat is bad or about keeping off roads when it snows.	9/24/2019 10:15 PM
4	Not our town...it's the County of Essex and the State that is ignoring the Passaic flooding.	9/24/2019 6:47 PM
5	Not desnagging river. Not buying out properties	9/24/2019 4:15 PM
6	Clean out the river in Fairfield	9/24/2019 3:46 PM
7	The river has not been cleaned in years it barely flows. Every rainstorm fear of flooding	9/24/2019 2:47 PM
8	Not much they can do about the river; better preventative maintenance on weakened trees and tree limbs; strengthening the power grid backups and ability to reroute power loads during outages	9/19/2019 4:24 PM
9	There are properties they could buy to use for stormwater storage or drainage	9/12/2019 6:39 PM
10	We've had severe flash flooding on our street and in 10 years, nothing has ever been done about it	9/11/2019 10:51 PM
11	Our solution for flood prevention seems to be based on hoping another flood does not occur. I have seen no changes to Essex County flood protection programs.	9/11/2019 9:27 PM
12	Regularly maintain backyard drain pipes and grates.	9/11/2019 7:25 PM
13	There's still no flood plan in my area after so many years. My house didn't flood but others in the neighborhood did	9/11/2019 6:35 PM
14	We need a flood mitigation plan in place.	9/11/2019 4:55 PM
15	The municipality has funded several projects to mitigate flooding in the township. However, there seems to be no Essex County interest in working with towns on a regional project.	9/11/2019 12:21 PM
16	Sandy showed overflowing. This Rahway river issue has never been solved in Millburn for the past 20+ years.	9/11/2019 8:37 AM
17	I've seen town DPW perform maintenance on storm/flood prevention infrastructure in my neighborhood.	9/10/2019 10:51 PM
18	It's not a complaint, but I'd like to see more done.	9/5/2019 5:39 AM
19	It seems like big redevelopment companies keep building and building, and nobody is addressing the problems occurring as a result.	9/4/2019 12:09 PM
20	We need more parks built in our town council members backyards	9/4/2019 11:00 AM
21	In my area it floods often and the management of our overflow areas are in need of a pump station	9/3/2019 5:28 PM
22	Verona has had flooding the past two years and it is not clear to me that anything is being done to remedy the problems.	9/3/2019 10:53 AM
23	The town has permitted building in flood prone areas such as Big Piece Rd and other flood prone areas	9/1/2019 11:02 AM
24	I believe my municipality is efficient but the River is a huge problem that I believe is above and beyond their responsibility.	8/31/2019 12:42 PM
25	There's too much flooding & too many power outages	8/30/2019 7:29 PM
26	We have had Floods in Caldwell like we never had in 50 years. I believe it's because of Caldwell and North Caldwell and all the building they are doing.	8/30/2019 3:33 PM
27	See above - Fairfield, wants more taxes again, so they are allowing overbuiding of land. Greed is going to bury a lot of houses the next time a hurricane hits. But it won't be those new homes	8/30/2019 2:23 PM

	that are putting in fill to build up houses.	
28	That is a qualified no. These people live here too and in many ways their hands are tied by county, state, and federal regulations. I don’t hold them personally responsible. But very little is actually done except for more talking. Very discouraging.	8/30/2019 11:57 AM
29	Clean the river	8/30/2019 10:09 AM
30	I think municipalities would like to prevent hazards however much resistance is met.	8/30/2019 9:52 AM
31	The drainage system can not withstand the overdevelopment in the area. That needs to be addressed. Also the dead trees in the area should be taken down	8/30/2019 9:20 AM
32	None of the West Essex communities have any education or backround on this subject. Verona is probably the best informed.	8/30/2019 7:54 AM
33	No, Roseland is cheap along with the county. They care more about buying police cars and fire engines than they do about buying snow removal equipment. Therefore the roads are extremely dangerous in the winter.	8/29/2019 7:01 PM
34	I have not seen any evidence of same	8/29/2019 4:53 PM
35	Crystal Lake in West Orange and Cable Lake in West Orange need improvement to prevent flooding if receive more than 6 inches of rain	8/29/2019 3:59 PM
36	So many downed trees due to i climate weather in Millburn. Most of the time, the homeowners have to take care of it	8/28/2019 11:26 PM
37	I want stricter stormwater codes across the board	8/28/2019 11:57 AM
38	don't know	8/28/2019 10:19 AM
39	Our strems and brooks could be cleared of debris from previous storms	8/5/2019 11:44 AM

Q23 If your property were located in a designated high-hazard area (for example, NFIP flood zone) or had received repeated damages from a natural disaster event, would you consider any of the following options?If your response is dependent on certain factors, such as the funding source, please indicate those factors in the following question.

Answered: 75 Skipped: 27

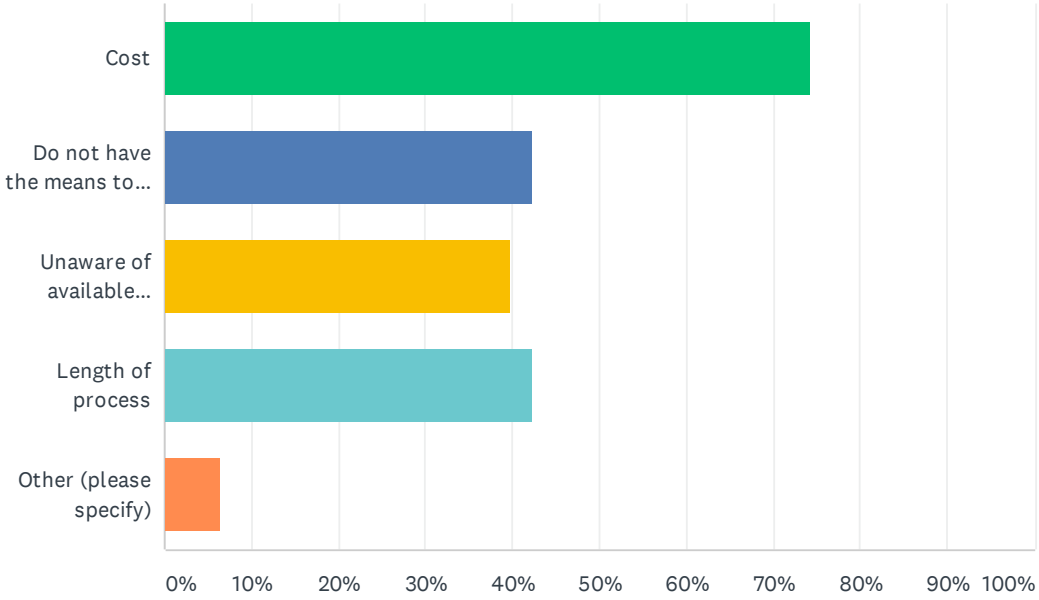

Having your property bou...
Moving your structure to...
Elevating your structure
Floodproof your structure
Look into other ways t...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Yes
No
Unsure

	YES	NO	UNSURE	TOTAL
Having your property bought out	45.95% 34	24.32% 18	29.73% 22	74
Moving your structure to another property or a less risky part of your property	18.06% 13	59.72% 43	22.22% 16	72
Elevating your structure	37.50% 27	43.06% 31	19.44% 14	72
Floodproof your structure	64.86% 48	18.92% 14	16.22% 12	74
Look into other ways to mitigate	70.42% 50	11.27% 8	18.31% 13	71

#	OTHER (PLEASE SPECIFY)	DATE
1	no flooding problems with the house	9/24/2019 10:15 PM
2	Remove the Pompton Gates, Beatties Damn, and create spillways for excess water during storms..water	9/24/2019 6:47 PM
3	We need state and county input.	9/11/2019 12:21 PM
4	I rent. I would move.	9/4/2019 12:09 PM
5	Unsure what would be possible. 50 years in my house hasn't seen anyone's interest in working with us to solve.	8/31/2019 12:42 PM
6	With financial help yes	8/30/2019 3:33 PM
7	Would love to do any of these things but can’t afford it.	8/30/2019 11:57 AM
8	I rent....but as a previous owner - the buyout will always be the best plan, and return the area to the County.	8/30/2019 7:54 AM
9	N/A	8/5/2019 11:44 AM

Q24 Please select the factor(s) that would influence your decision on the mitigation options listed above (buyout/acquisition, relocation, or elevation).

Answered: 78 Skipped: 24



ANSWER CHOICES	RESPONSES	
Cost	74.36%	58
Do not have the means to move/relocate	42.31%	33
Unaware of available programs	39.74%	31
Length of process	42.31%	33
Other (please specify)	6.41%	5
Total Respondents: 78		

#	OTHER (PLEASE SPECIFY)	DATE
1	Everyone, especially seniors, needs to know what is out there available in case we need help.	9/24/2019 10:15 PM
2	"We didn't start the fire"..the river flooded bad but once 50 years before we moved here.....6 times since we did (and the Pompton Gates became operational.	9/24/2019 6:47 PM
3	Concern that the program or process would not be fulfilled as designed	9/11/2019 10:20 PM
4	Illness	9/4/2019 12:09 PM
5	N/A	8/5/2019 11:44 AM

Q25 If you have already had to spend money to mitigate your property, how much have you spent and on what measures?

Answered: 36 Skipped: 66

#	RESPONSES	DATE
1	none	10/7/2019 8:57 AM
2	None.	9/26/2019 10:48 AM
3	Fix the river, clean it	9/24/2019 6:47 PM
4	50,000 installation and rebuilding of walls and sump pumps and drainage	9/24/2019 2:47 PM
5	Unsure	9/23/2019 7:52 PM
6	N/A	9/19/2019 4:24 PM
7	$0	9/19/2019 12:00 PM
8	3000. Outside pump	9/17/2019 7:36 AM
9	N/A	9/12/2019 6:39 PM
10	We didn't have the money to replace and repair larger damages and resolved essential repairs + cleanup ourselves	9/11/2019 10:20 PM
11	Installed a pump in backyard, approximately $6,000, to move backyard water up to sewer system at street level. This will help with garden-variety rain storms, but not for major hurricanes.	9/11/2019 9:27 PM
12	$50,000 to re-do finished basement	9/11/2019 7:25 PM
13	N/A	9/11/2019 6:11 PM
14	Depends	9/11/2019 4:55 PM
15	We pay flood insurance annually.	9/11/2019 12:21 PM
16	$10,000: Bathtub my home; regrade backyard, install additional drainage piping.	9/11/2019 8:37 AM
17	No	9/10/2019 10:51 PM
18	I rent, so n/a	9/4/2019 12:09 PM
19	Forget about it	9/4/2019 11:00 AM
20	$5000	9/3/2019 5:28 PM
21	N/A	9/3/2019 3:52 PM
22	$5-$10K	9/3/2019 11:14 AM
23	50000	8/31/2019 2:46 PM
24	N/a	8/30/2019 7:29 PM
25	What wasn’t covered by flood ins and the deductible	8/30/2019 10:09 AM
26	Unsure at this time.	8/30/2019 9:52 AM
27	About $1000 between water warning devices now placed in the basement and purchasing a generator to power the sump pumps (2) when we lose power.	8/30/2019 9:15 AM
28	?	8/30/2019 9:11 AM
29	$10k replaced drainage pipes, installed well in rear yard	8/30/2019 9:09 AM
30	At least $50,000 on repairing damage caused by floods, and falling trees.	8/29/2019 7:01 PM
31	So far just minor repairs	8/29/2019 4:53 PM
32	Na	8/28/2019 11:26 PM
33	None	8/28/2019 12:34 PM
34	Loss based- did not replace lost furniture -	8/28/2019 11:57 AM
35	NA	8/28/2019 10:43 AM

36	N/A	8/5/2019 11:44 AM

Q26 Which (if any) incentives would motivate you to spend money on protecting your home from the possible impacts of a disaster? Such as lower interest rates, grant funding, waivers, etc.

Answered: 53 Skipped: 49

#	RESPONSES	DATE
1	grant funding and waivers	10/7/2019 8:57 AM
2	Grant funding	9/26/2019 10:48 AM
3	Waivers, grant funding	9/25/2019 3:40 PM
4	funding; streamlined red tape	9/25/2019 12:37 PM
5	lower interest rates and waivers or tax credits towards our property tax bills	9/24/2019 10:15 PM
6	Fix the river, clean it	9/24/2019 6:47 PM
7	Grants	9/24/2019 4:15 PM
8	Low interest rates	9/24/2019 3:46 PM
9	Grant funding and waivers	9/24/2019 2:47 PM
10	grant funding	9/24/2019 12:10 PM
11	Waivers	9/23/2019 7:52 PM
12	N/A	9/19/2019 4:24 PM
13	Grants	9/19/2019 12:00 PM
14	All the above	9/17/2019 7:36 AM
15	Grant funding, tax breaks	9/12/2019 6:39 PM
16	Solor energy grants & substantial income tax incentives to install alternate and/or temporary household energy during prolonged outages.	9/11/2019 10:20 PM
17	Insurance credits	9/11/2019 7:25 PM
18	Grant funding.	9/11/2019 6:11 PM
19	Depends	9/11/2019 4:55 PM
20	Grant funding and waivers	9/11/2019 12:21 PM
21	all of the above	9/11/2019 8:37 AM
22	grant funding/tax abatement	9/10/2019 10:51 PM
23	All of the above	9/10/2019 8:38 PM
24	n/a	9/4/2019 12:09 PM
25	Give me money	9/4/2019 11:00 AM
26	grants funding with a mandatory training session for two years of Fema training for 50 hours	9/3/2019 5:28 PM
27	Grant funding	9/3/2019 3:52 PM
28	Only if neighbors were required to do the same. I have great insurance so I have to pay every time someone else's badly cared for trees fall on my property and destroy stuff	9/3/2019 11:14 AM
29	Low interest loans and grants.	9/3/2019 10:53 AM
30	If you fix the drainage/run off from all the building on the Hilltop, or stop the building, we wouldn't have to	9/1/2019 7:39 AM
31	Grant funding	8/31/2019 7:57 PM
32	Money to restore property	8/31/2019 2:46 PM
33	Tax credits/ deductions	8/31/2019 1:37 PM
34	Infrastructure repair, redesign. Road, driveway and lawns all flood	8/31/2019 12:42 PM
35	Money up front	8/30/2019 7:29 PM

36	Financial help	8/30/2019 3:33 PM
37	Grant funding	8/30/2019 3:31 PM
38	Lower flood insurance rates	8/30/2019 2:23 PM
39	Grants would’ve great. I’m not sure what you mean by waivers.	8/30/2019 11:57 AM
40	N/a	8/30/2019 10:09 AM
41	Open to any ideas and possibilities	8/30/2019 9:52 AM
42	Any financial help	8/30/2019 9:20 AM
43	Discounted equipment, tax breaks.	8/30/2019 9:15 AM
44	More government money available	8/30/2019 9:11 AM
45	Grant funding	8/30/2019 9:00 AM
46	No, I don’t need an incentive to make a safe place for my family.	8/29/2019 7:01 PM
47	Lower interest rates would help	8/29/2019 4:53 PM
48	Lower property taxes	8/28/2019 11:26 PM
49	None	8/28/2019 12:34 PM
50	If I knew that the area was taking meaningful steps towards improving he areas infrastructure and rules - then I too would invest	8/28/2019 11:57 AM
51	NA	8/28/2019 10:43 AM
52	Information sharing about available grants and waivers	8/28/2019 10:19 AM
53	N/A	8/5/2019 11:44 AM

Q27 Please list any additional types of projects you believe local, county, state or federal government agencies could be doing to reduce the damage and disruption in Essex County.

Answered: 44 Skipped: 58

#	RESPONSES	DATE
1	more open spaces, rain gardens, community gardens, urban farming	10/7/2019 8:57 AM
2	More open spaces interspersed around towns to absorb flooding.	9/26/2019 10:48 AM
3	Teach people how to be more self reliant.	9/25/2019 3:40 PM
4	A communication system that gives accurate updated information on power outages, including specific estimates for restoration to properties. This should be designed with a view both towards residential properties, and general information about the community (e.g. a list of major facilities like hospitals, schools, and supermarkets, with information on whether they have power and are open). During Hurricane Sandy, slow and haphazard information was a major problem.	9/25/2019 12:37 PM
5	Clean the Passaic River	9/24/2019 9:21 PM
6	Fix the river, clean it...remove the Pompton Gate that protect 300 mansions on the lake, get rid of Beatties dam	9/24/2019 6:47 PM
7	Removing beanies dam	9/24/2019 4:15 PM
8	Clean out the river in Fairfield	9/24/2019 3:46 PM
9	Flood plan and protection of property also buy outs and flood prevention structures	9/24/2019 2:47 PM
10	Speeding reductions and sidewalk paths are needed in west orange	9/23/2019 7:52 PM
11	Restore open spaces that have been paved over and built upon	9/19/2019 4:24 PM
12	Preventative measures	9/19/2019 12:00 PM
13	Reduce development upstream of Millburn in other Essex county towns to reduce amount of stormwater. Create storage upstream. Know hazards of gas pipes and oil tanks and to service regularly.	9/12/2019 6:39 PM
14	Demand all public Utility and Communication companies servicing Essex County provide substantial automatic rebates for disruption of service & free/timely replacement of damaged equipment. Investigate supplemental energy & communication providers from neighboring counties or states that could mobilize and service our area in Emergeny. The terms of any demand upon existing and potential providers should be comprehensive and legally enforcable, and in the event that any of those providers becomes overwhelmed by the scope of their responsibility - ensures Essex County is the contract they have the greatest *motivation* to prioritize.	9/11/2019 10:20 PM
15	dredging the rahway river; adding more water damming capacity in South Mountain Reservation.	9/11/2019 9:27 PM
16	Drain/lower Orange Reservoir	9/11/2019 7:25 PM
17	Drain the reservoir and other ponds prior to large expected rains	9/11/2019 6:35 PM
18	Harden electrical grid.	9/11/2019 6:11 PM
19	Essex County should look at the feasibility of a flood mitigation project in the So. Mountain Reservation	9/11/2019 12:21 PM
20	increase storm water pipe sizing and add pumping	9/11/2019 8:37 AM
21	Preparedness programs	9/10/2019 10:51 PM
22	Flood precautions to the Passaic river	9/10/2019 8:38 PM
23	Stopping corruption	9/4/2019 11:00 AM
24	Disaster agency	9/3/2019 3:52 PM
25	Stop the building, there is no where for the water to go.	9/1/2019 7:39 AM
26	Flood gates	8/31/2019 2:46 PM
27	Dredge the great swamp (between rte. 280 and Bloomfield Ave). Build a deep lake. Could make $$! Anything really to alleviate the Passaic River flooding issue	8/31/2019 12:42 PM

28	N/a	8/30/2019 7:29 PM
29	STOP Building	8/30/2019 3:33 PM
30	Less talk and more action. The town , county, state, Army Corp of Engineers, and Federal government are already well aware of our flooding issues and nothing is ever done. The flood tunnel that was proposed (I believe back when Whitman was governor) would have cost a lot less then than it would now. Cleaning,dredging, and desnagging the river and streams would be of some help. Issues with control of dam in Oakland could be addressed. No more building! Nothing new about any of these ideas. Have Ben talked about forever. Blah blah blah. More talking and no action. Buying people out with enough money to actually help them relocate to a comparable home.	8/30/2019 11:57 AM
31	?	8/30/2019 10:09 AM
32	Unknown	8/30/2019 9:52 AM
33	More control if public utilities	8/30/2019 9:11 AM
34	Sufficient drain / sewer capacity	8/30/2019 9:09 AM
35	Actually care !	8/30/2019 9:00 AM
36	1) You need to go stream by stream throughout West Essex 2) Every single drainage area needs to be evalated. Why were manholes on fire during August 2018 storm? 3) All wiring will need to be underground	8/30/2019 7:54 AM
37	Have the feds come in to clean up the nepotism and replace the unqualified hacks with people that know how to do the job.	8/29/2019 7:01 PM
38	See comment above about getting architects involved.	8/29/2019 4:53 PM
39	Repair the roads to prevent issues.	8/28/2019 11:26 PM
40	None	8/28/2019 12:34 PM
41	Stormwater fee for impervious ground cover - county wide strict stormwater rules and tree protection programs -	8/28/2019 11:57 AM
42	Strengthen public health	8/28/2019 10:43 AM
43	Share more information about preparations when "windows" of relevance open. If towns see flooding, circulate information as quickly as possible when individuals are motivated to address it. Have all of the public health materials ready for dispersion across all accounts (social media, web, email, etc.) for quick distribution as events take place.	8/28/2019 10:19 AM
44	Strengthen electric utility infrastructure, power lines, utility poles etc. Trim and cut dead trees on regular basis.	8/5/2019 11:44 AM

Q28 Do you have any other comments, questions, or concerns regarding hazard mitigation in Essex County?

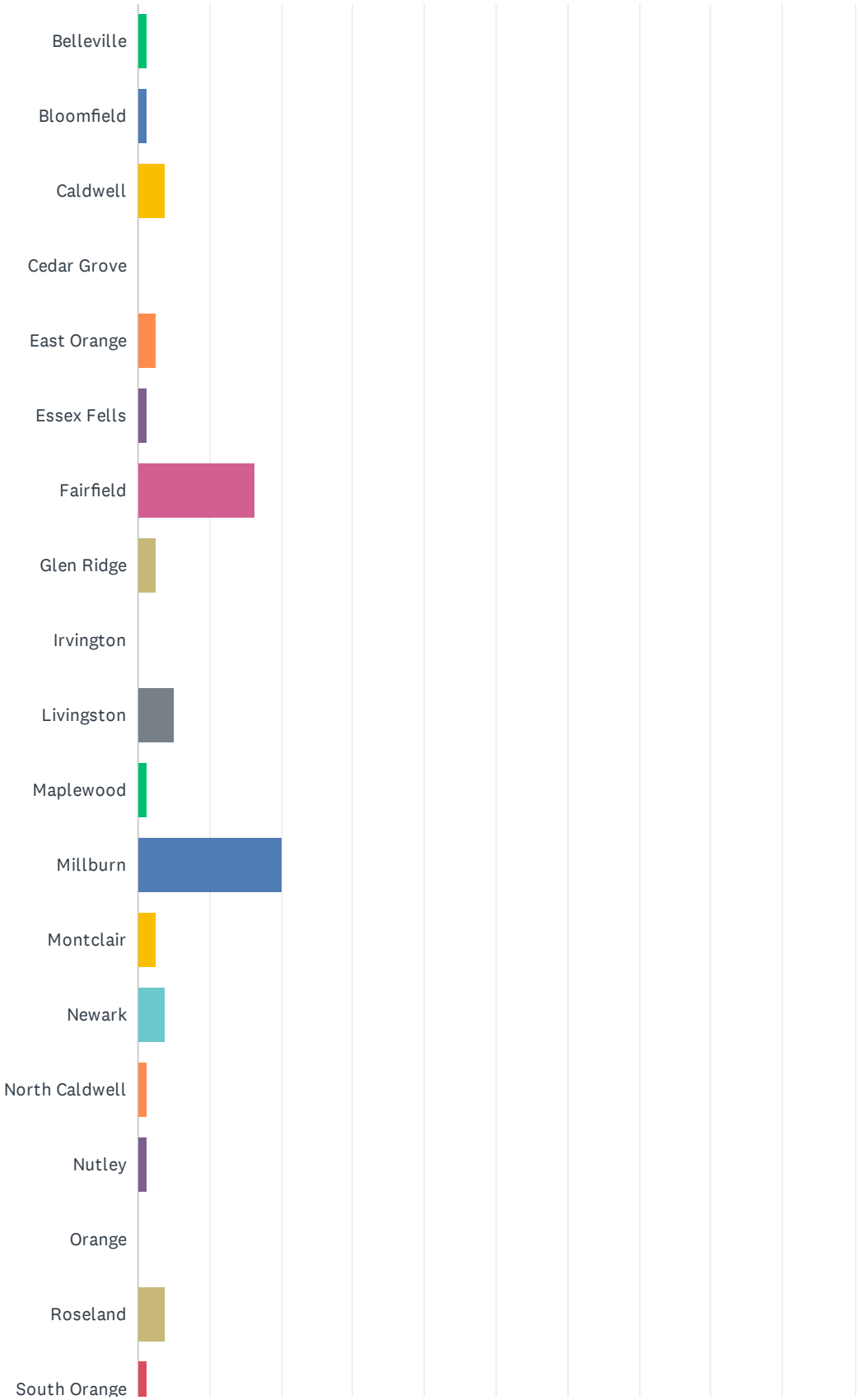
Answered: 36 Skipped: 66

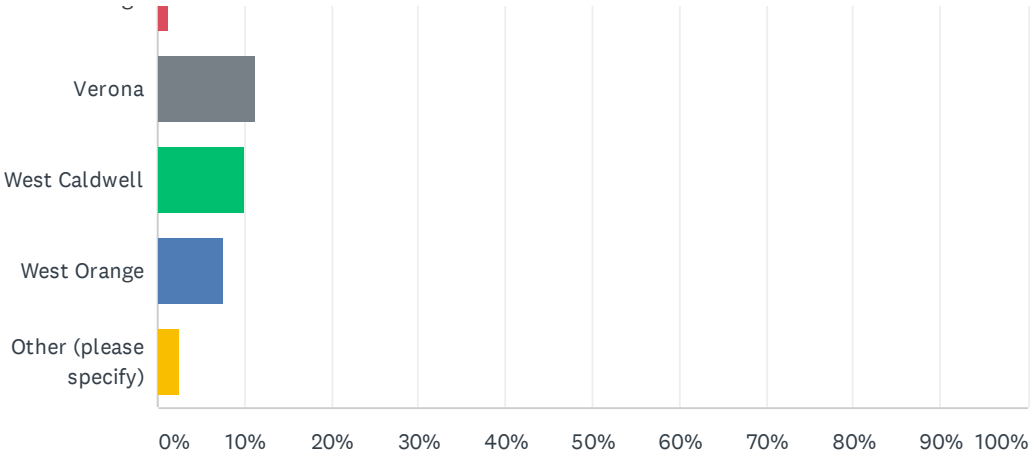
#	RESPONSES	DATE
1	No.	9/26/2019 10:48 AM
2	More information should be provided to residents on evacuation plans and routes, in the event that there's a natural or non-natural event in e.g. NYC.	9/25/2019 12:37 PM
3	Essex seems to always be fixing roads and bridges. It's really nice to see that the County really does care about the taxpayers.	9/24/2019 10:15 PM
4	Yes..are you aware of how much money has been spent on "studies" vs. monies spent on doing utterly nothing to fix the situation?	9/24/2019 6:47 PM
5	Clean out the river in Fairfield	9/24/2019 3:46 PM
6	Roads are extremely dangerous even when there is no inclement weather	9/23/2019 7:52 PM
7	No	9/19/2019 4:24 PM
8	No	9/19/2019 12:00 PM
9	Invest in public Solar Banks throughout Essex County in each town [parking decks, schools, parks, community pools, recreation facilities, public parking, etc.] with battery backup. Non-emergency interim surplus can be sold to Utility providers or credits applied to Essex County utility bills. Have OEM investigate 3 of the top performing generators [2 at homeowner range, 1 at small business range] and negotiate a substantial discount with manufacturer/distributor for Essex County residents to purchase direct. In preparation of a predicted prolonged emergency - require that Gas Stations in Essex County replenish 100% fuel storage to prevent local shortages.	9/11/2019 10:20 PM
10	No	9/11/2019 9:27 PM
11	Please help solve flooding in Essex County! Thank You.	9/11/2019 7:25 PM
12	No	9/11/2019 6:11 PM
13	Essex County is not doing enough.	9/11/2019 12:21 PM
14	Water will be the biggest issue as well as electrical infrastructure.	9/11/2019 8:37 AM
15	No.	9/10/2019 10:51 PM
16	If you stop reducing natural barriers in the reservation, natural hazard mitigation will occur.	9/6/2019 9:11 AM
17	I'd like to know what plans have been put in place to handle rainwater with all the big construction happening in Montclair.	9/4/2019 12:09 PM
18	Shut down the Essex county detention center and stop killing detainees and feeding them fecal matter - fire Phil Aglia and retire JoeD	9/4/2019 11:00 AM
19	A diaster team should be put into place and the workers do not need to be City or County workers with day jobs working for the government. Traing the district leaders and othwrs who are out here on the feont lines	9/3/2019 5:28 PM
20	Together we are stronger	9/3/2019 3:52 PM
21	Overall, other than trees and storm drain issues, I think we do a pretty good job.	9/3/2019 11:14 AM
22	No	8/31/2019 2:46 PM
23	Needs to be better communication	8/30/2019 7:29 PM
24	Get the community's more involved in what they can do to help during major storms ect	8/30/2019 3:33 PM
25	Flooding is my main concern at this time.	8/30/2019 11:57 AM
26	Spend more on this	8/30/2019 10:09 AM
27	Would like to be informed of status and possibilities.	8/30/2019 9:52 AM
28	Act on the problems instead of just talking about them	8/30/2019 9:00 AM
29	Yes - I'm happy to work with you all	8/30/2019 7:54 AM

30	No, it’s not like you are going to do anything anyway.	8/29/2019 7:01 PM
31	There needs to be a so called "rainy day fund" at the ready	8/29/2019 4:53 PM
32	Keeping South Mountain Reservation in its natural state and not expanding Turtle Back Zoo into it	8/29/2019 3:59 PM
33	None	8/28/2019 12:34 PM
34	No	8/28/2019 10:43 AM
35	I need to read more about the available plans but I hope there are existing plans for overflow from evacuations related to NYC. If surrounding areas are affected by disasters, Essex County will see surges of people and we should be prepared ahead of time.	8/28/2019 10:19 AM
36	No	8/5/2019 11:44 AM

Q29 Please indicate the municipality in which you live:

Answered: 80 Skipped: 22



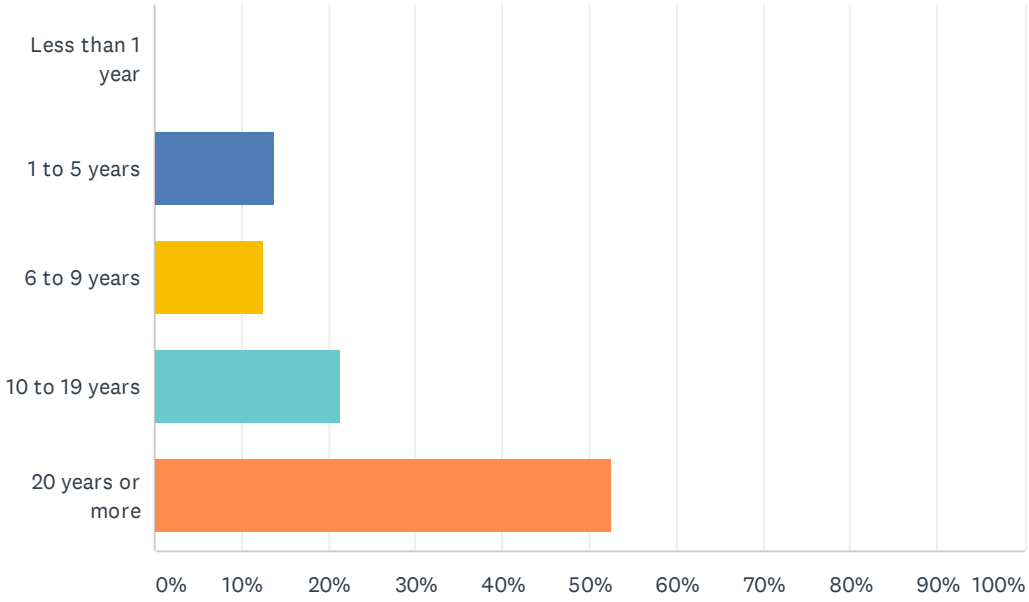

Verona
West Caldwell
West Orange
Other (please specify)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
Belleville	1.25%	1
Bloomfield	1.25%	1
Caldwell	3.75%	3
Cedar Grove	0.00%	0
East Orange	2.50%	2
Essex Fells	1.25%	1
Fairfield	16.25%	13
Glen Ridge	2.50%	2
Irvington	0.00%	0
Livingston	5.00%	4
Maplewood	1.25%	1
Millburn	20.00%	16
Montclair	2.50%	2
Newark	3.75%	3
North Caldwell	1.25%	1
Nutley	1.25%	1
Orange	0.00%	0
Roseland	3.75%	3
South Orange	1.25%	1
Verona	11.25%	9
West Caldwell	10.00%	8
West Orange	7.50%	6
Other (please specify)	2.50%	2
TOTAL		80

#	OTHER (PLEASE SPECIFY)	DATE
1	Forget about it	9/4/2019 11:01 AM
2	Roseland most of life / Caldwell 10 years / Verona 1 year / North Caldwell 3 years / Fairfield 1 year	8/30/2019 7:56 AM

Q30 How long have you lived here?

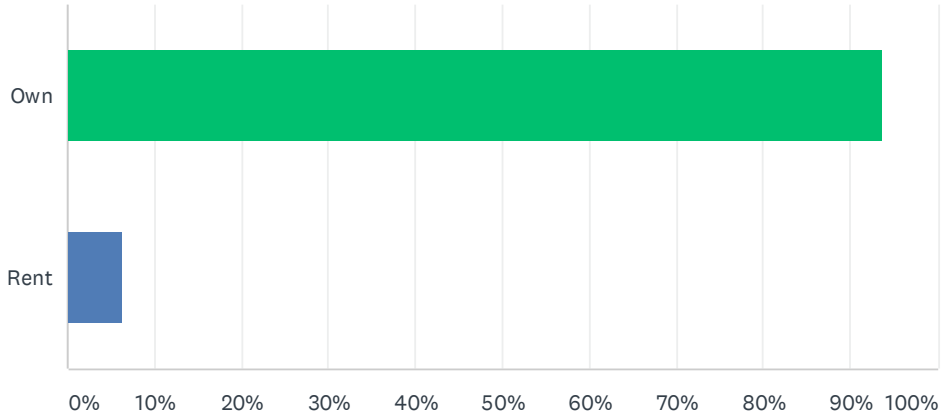
Answered: 80 Skipped: 22



ANSWER CHOICES	RESPONSES	
Less than 1 year	0.00%	0
1 to 5 years	13.75%	11
6 to 9 years	12.50%	10
10 to 19 years	21.25%	17
20 years or more	52.50%	42
TOTAL		80

Q31 Do you own or rent your place of residence?

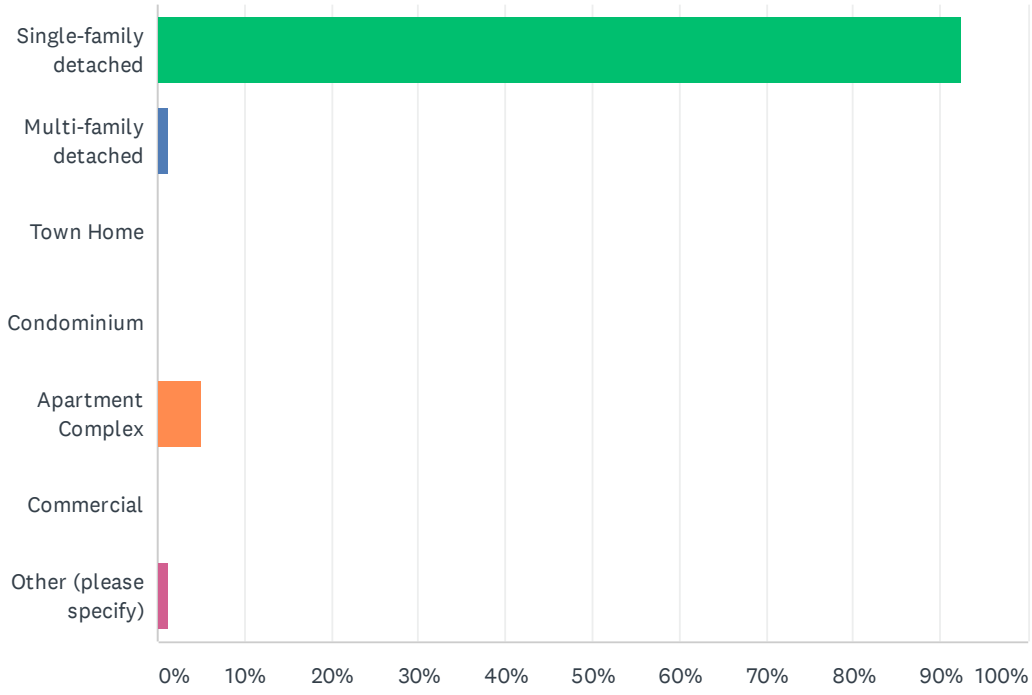
Answered: 79 Skipped: 23



ANSWER CHOICES	RESPONSES	
Own	93.67%	74
Rent	6.33%	5
TOTAL		79

Q32 What type of residence do you live in?

Answered: 80 Skipped: 22



ANSWER CHOICES	RESPONSES	
Single-family detached	92.50%	74
Multi-family detached	1.25%	1
Town Home	0.00%	0
Condominium	0.00%	0
Apartment Complex	5.00%	4
Commercial	0.00%	0
Other (please specify)	1.25%	1
TOTAL		80

#	OTHER (PLEASE SPECIFY)	DATE
1	I'm now in FF affordable housing; previously homes	8/30/2019 7:56 AM

Q33 What street is your property on? (optional, will be kept confidential - only used to identify hazard areas such as flooding)

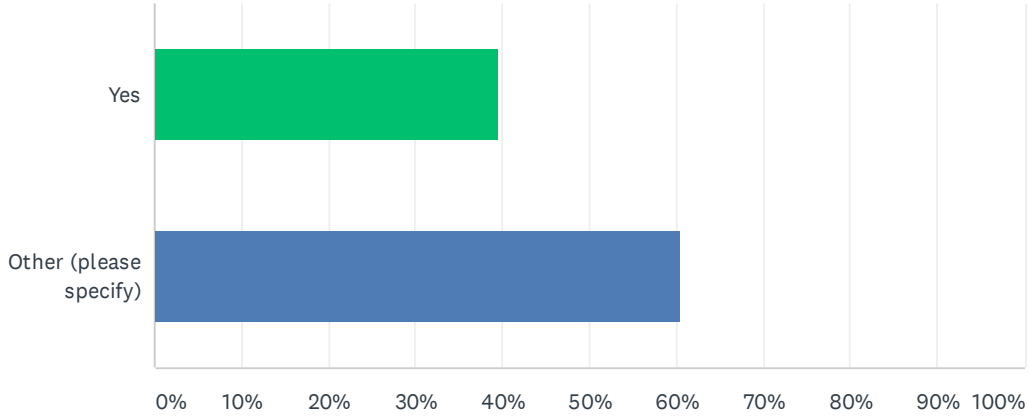
Answered: 65 Skipped: 37

#		DATE
1		12/3/2019 5:24 AM
2		10/7/2019 8:59 AM
3		10/4/2019 10:37 AM
4		9/26/2019 10:49 AM
5		9/25/2019 12:37 PM
6		9/24/2019 10:18 PM
7		9/24/2019 9:22 PM
8		9/24/2019 6:48 PM
9		9/24/2019 3:50 PM
10		9/24/2019 3:47 PM
11		9/24/2019 2:49 PM
12		9/24/2019 12:11 PM
13		9/23/2019 7:53 PM
14		9/19/2019 4:25 PM
15		9/19/2019 12:01 PM
16		9/17/2019 7:38 AM
17		9/13/2019 6:03 PM
18		9/11/2019 10:51 PM
19		9/11/2019 10:21 PM
20		9/11/2019 8:16 PM
21		9/11/2019 7:27 PM
22		9/11/2019 6:37 PM
23		9/11/2019 6:13 PM
24		9/11/2019 1:59 PM
25		9/11/2019 12:22 PM
26		9/11/2019 8:48 AM
27		9/11/2019 8:38 AM
28		9/10/2019 10:52 PM
29		9/10/2019 8:39 PM
30		9/4/2019 11:01 AM
31		9/3/2019 5:30 PM
32		9/3/2019 3:54 PM
33		9/3/2019 2:35 PM
34		9/3/2019 12:37 PM
35		9/3/2019 11:14 AM
36		9/3/2019 10:54 AM
37		9/1/2019 11:05 AM

38		9/1/2019 7:40 AM
39		8/31/2019 7:58 PM
40		8/31/2019 1:37 PM
41		8/31/2019 12:45 PM
42		8/30/2019 7:30 PM
43		8/30/2019 3:35 PM
44		8/30/2019 3:32 PM
45		8/30/2019 2:23 PM
46		8/30/2019 12:00 PM
47		8/30/2019 11:10 AM
48		8/30/2019 10:10 AM
49		8/30/2019 9:53 AM
50		8/30/2019 9:22 AM
51		8/30/2019 9:16 AM
52		8/30/2019 9:09 AM
53		8/30/2019 9:02 AM
54		8/30/2019 8:22 AM
55		8/30/2019 7:56 AM
56		8/29/2019 9:03 PM
57		8/29/2019 7:04 PM
58		8/29/2019 4:55 PM
59		8/28/2019 11:27 PM
60		8/28/2019 12:35 PM
61		8/28/2019 11:14 AM
62		8/28/2019 10:44 AM
63		8/28/2019 10:31 AM
64		8/28/2019 10:20 AM
65		8/5/2019 11:46 AM

Q34 If you received real estate disclosure information when you moved into your current residence, did your real estate agent or landlord explain the implications of living in a hazard risk zone and did you understand the information they presented?

Answered: 53 Skipped: 49

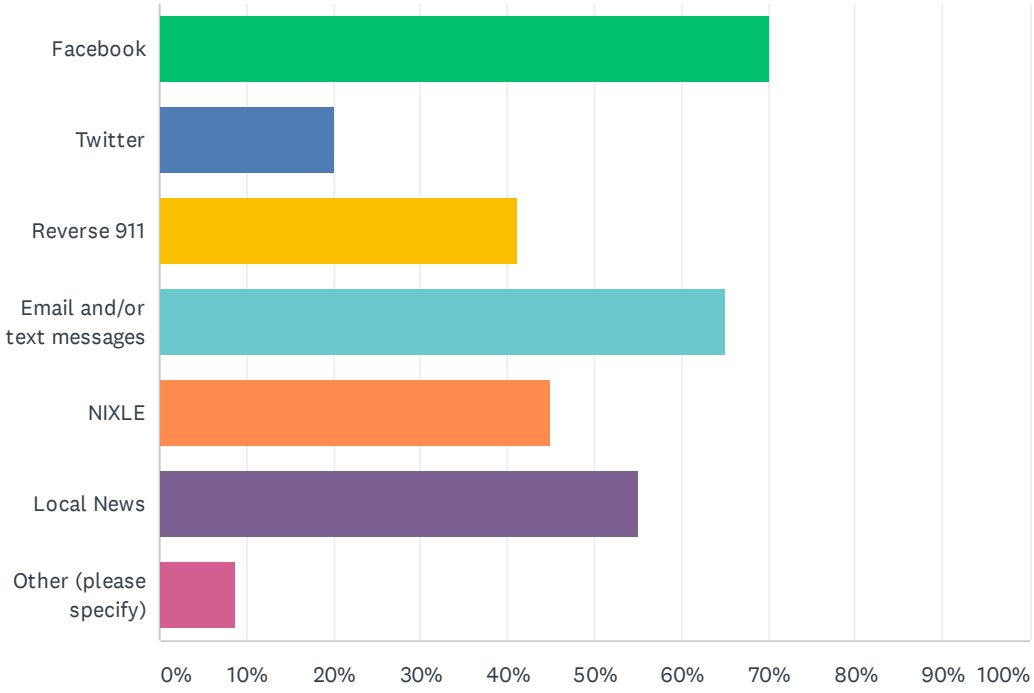


ANSWER CHOICES	RESPONSES	
Yes	39.62%	21
Other (please specify)	60.38%	32
TOTAL		53

#	OTHER (PLEASE SPECIFY)	DATE
1	not received	10/7/2019 8:59 AM
2	I don't remember	9/26/2019 10:49 AM
3	never mentioned	9/24/2019 10:18 PM
4	It wasn't considered a hazard back then	9/24/2019 6:48 PM
5	N/a	9/23/2019 7:53 PM
6	Did not receive anything. Maybe in 1991 things were different	9/17/2019 7:38 AM
7	No	9/11/2019 10:51 PM
8	N/A	9/11/2019 10:21 PM
9	Not exactly. We were told that the flooding problem after Hurricane Floyd had been solved by the flood wall along the river. Irene showed us that was not true.	9/11/2019 7:27 PM
10	Do not remember being told	9/11/2019 6:37 PM
11	No	9/11/2019 6:13 PM
12	Was told house was not in flood zone and that no insurance was needed	9/11/2019 1:59 PM
13	Inherited family home	9/11/2019 8:48 AM
14	no	9/11/2019 8:38 AM
15	N/a	9/10/2019 8:39 PM
16	No	9/4/2019 11:01 AM
17	N/A	9/3/2019 3:54 PM
18	na	9/3/2019 12:37 PM
19	N/a	9/1/2019 4:42 PM
20	We moved here in 1973, no info provided	9/1/2019 11:05 AM
21	It was not a hazard risk zone.	9/1/2019 7:40 AM
22	Was over 50 years ago, don't remember	8/31/2019 12:45 PM
23	N/a	8/30/2019 7:30 PM
24	No one gives that out no matter where you live	8/30/2019 3:35 PM
25	Moved into my present home in 1980. Don’t remember to be honest	8/30/2019 12:00 PM
26	No	8/30/2019 9:53 AM
27	No	8/30/2019 9:12 AM
28	No	8/30/2019 9:09 AM
29	I've never had a Real Estate agent mention anything environmental environmental for any of my locations	8/30/2019 7:56 AM
30	Do not remember receiving anything, but it was over 40 years ago	8/29/2019 4:55 PM
31	No	8/28/2019 10:31 AM
32	No	8/5/2019 11:46 AM

Q35 Which of the following digital media outlets do you use and/or subscribe to receive general news and information about Essex County? Check all that apply.

Answered: 80 Skipped: 22

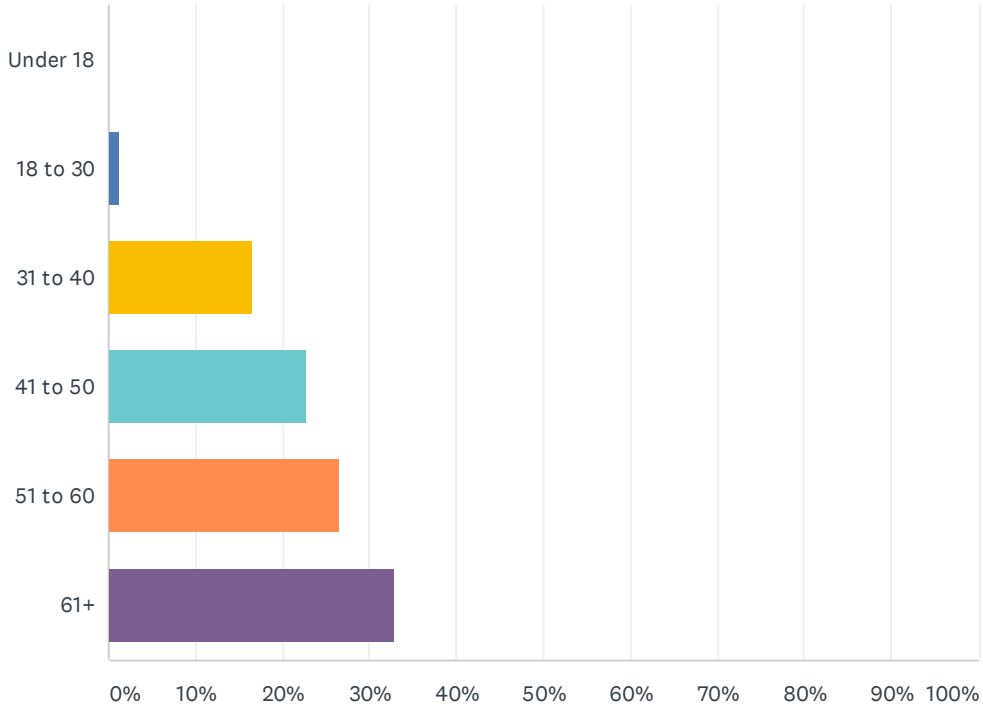


ANSWER CHOICES	RESPONSES	
Facebook	70.00%	56
Twitter	20.00%	16
Reverse 911	41.25%	33
Email and/or text messages	65.00%	52
NIXLE	45.00%	36
Local News	55.00%	44
Other (please specify)	8.75%	7
Total Respondents: 80		

#	OTHER (PLEASE SPECIFY)	DATE
1	word of mouth - folks tell their friends about things	9/24/2019 10:18 PM
2	Swiftreach	9/12/2019 6:41 PM
3	District Leaders of the C team	9/3/2019 5:30 PM
4	Occasionally local news online	8/31/2019 12:45 PM
5	West Essex Now	8/30/2019 7:56 AM
6	Would like AM Emergency Radio Station for West Orange and Turtle Back Zoo	8/29/2019 4:01 PM
7	They don't have any of this	6/20/2019 2:40 PM

Q36 Please indicate your age range:

Answered: 79 Skipped: 23



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18 to 30	1.27%	1
31 to 40	16.46%	13
41 to 50	22.78%	18
51 to 60	26.58%	21
61+	32.91%	26
TOTAL		79

APPENDIX E. RISK ASSESSMENT SUPPLEMENT

This appendix contains supporting information for the Risk Assessment (Section 4) as available. It contains excerpts of the previous events and losses as presented in the 2015 HMP, organized by hazard of concern. This information has been compiled into one appendix for ease of reference; however, it has not been updated or verified, and is reproduced as documented in the 2015 plan.

In order to create a more streamlined plan, the 2020 HMP was reorganized and condensed into a practical and more readable document for the public with the goal of providing a plan easier to implement for the County and all municipalities to support future risk reduction. The information in this appendix supplements the information provided in Section 4.3 of this plan.

E.1 CRITICAL FACILITIES AND LIFELINES

The identification of community lifelines across Essex County provides an enhancement to the 2020 HMP.

FEMA defines a lifeline as: *"providing indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security."* Identifying community lifelines will help government officials and stakeholders to prioritize, sequence, and focus response efforts towards maintaining or restoring the most critical services and infrastructure within their respective jurisdiction(s). Identifying potential impacts to lifelines can help to inform the planning process and determining priorities in the event an emergency occur. The following page is FEMA's factsheet that describes lifelines further.

Homeland Security

Community Lifelines

National Response Framework Update (Fourth Edition)

A lifeline provides indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security.

Why a lifelines construct?

Decision-makers must rapidly determine the scope, complexity, and interdependent impacts of a disaster. Applying the lifelines construct allows decision-makers to:

- Prioritize, sequence, and focus response efforts towards maintaining or restoring the most critical services and infrastructure
- Utilize a common lexicon to facilitate unity of purpose across all stakeholders
- Promote a response that facilitates unity of purpose and better communication amongst the whole community (Federal, state, tribal, territorial, and local governments, and private sector and non-governmental entities)
- Clarify which components of the disaster are complex (multifaceted) and/or complicated (difficult), requiring cross-sector coordination

How will lifelines be used?

- Enhance the ability to gain, maintain, and communicate situational awareness for the whole community in responding to disasters
- Analyze impacts to the various lifelines and develop priority focus areas for each operational period during response
- Identify and communicate complex interdependencies to identify major limiting factors hindering stabilization
- Update the National Response Framework to reflect use of lifelines in response planning

What are the opportunities of lifelines?

- Enable a true unity of effort between government, non-governmental organizations, and the private sector, including infrastructure owners and operators
- Integrate preparedness efforts, existing plans, and identify unmet needs to better anticipate response requirements
- Refine reporting sources and products to enhance situational awareness, best determine capability gaps, and demonstrate progress towards stabilization

Lifelines



Visit us at http://www.fema.gov/national-planning-frameworks

"With honor and integrity, we will safeguard the American people, our homeland, and our values."

E.2 HISTORY OF HAZARD EVENTS IN THE COUNTY

To supplement the information provided in this plan, events documented in the 2015 HMP are included below by hazard of concern. The previous events and losses listed were directly carried over from the 2015 HMP and reflects events identified from 2007 to 2014. With many sources reviewed for the purpose of this HMP, loss and impact information for events 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.

E.2.1 Coastal Erosion and Sea Level Rise

Table E.2.1-1. Coastal Erosion Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
August 26 – September 5, 2011	Hurricane Irene	DR-4021	Yes	Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. The heavy rain from the storm caused record-breaking floods on many streams throughout the State. Thirty-nine of the 94 USGS gages with greater than or equal to 20 years of record, had record high peaks. Thirty-three gages experienced peaks equal to or greater than the 100-year recurrence interval. NWS climate site at Newark recorded 8.92 inches of rain. In Essex County, in West Orange Township, nearly 15 homes were damaged from fallen trees. Emergency crews responded to 120 calls and closed several streets. Rainfall totals ranged from 7.32 inches in Essex Fells to 9.96 inches in Orange; with 7.69 inches falling at Newark Airport which was the highest one-day total for Newark Airport. Peak wind gusts of 40 mph and 61 mph were recorded at Caldwell and Newark Airports, respectively. In Belleville, downed trees were reported on Watchung Avenue. Overall, the municipalities experienced flooding, downed trees, power outages, flooding, evacuations, and over $1.8 million in clean-up and other costs to the municipalities. The Passaic River gage at the Passaic Valley Sewage Commission recorded a peak stage of 7.11 feet, 0.64 feet higher than the previous peak of record on March 13, 2010.
October 29, 2011	Severe Storm	DR-4048	Yes	Rain began to fall in southern New Jersey early on October 29, 2011 and spread north. Some northern areas of the State saw the precipitation begin as snow and during the morning, the rain turned to snow in central and northern New Jersey. Moderate to heavy snow continued into the afternoon, mixing with sleet in lower elevations.

Table E.2.1-1. Coastal Erosion Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				Once the snow tapered off during the morning of October 30, 2011, New Jersey had experienced its largest October snowstorm since the late 18th century. Once several inches of snow had accumulated, tree branches and entire trees began to snap and crash onto homes, power lines and cars. By the end of the storm, over 600,000 customers lost power, with some remaining without power for over a week. In Essex County, snowfall totals ranged from 4.9 inches in Belleville Township to 8 inches in West Orange Township. In Verona Township, the wastewater treatment plant flooded and sustained damage to its system. Many municipalities reported road closures, loss of utilities, closed schools and debris removal. Several residents were evacuated from their homes in Roseland Borough. Shelters were open throughout the County as well. Overall, the County had over $1.5 million in clean-up costs and other expenses to the municipalities.
October 26 – November 8, 2012	Superstorm Sandy	DR-4086	Yes	The storm tide caused inundations of two to four feet in Bergen and Essex Counties. The deepest water occurred in areas that border Lower New York Bay, Raritan Bay, and the Raritan River. As storm surge from Sandy was pushed into New York and Raritan Bays, sea water piles up within the Hudson River and the coastal waterways and wetlands of northeastern New Jersey, including Newark Bay, the Passaic and Hackensack Rivers, Kill Van Kull, and Arthur Kill. Inundations of four to six feet were measured across Newark Bay in Elizabeth and the area around Newark Liberty International Airport. In Essex County, inundations of four to six feet were measured across Newark Bay in Elizabeth and the area around Newark Airport. Storm tide at Newark was 11.6 feet with an estimated inundation (maximum depth of water on land) of 3.5 feet. The City of Newark had 7.65 inches of rainfall. Peak wind gusts ranged from 70 mph at Caldwell Airport to 78 mph at Newark Airport. In Fairfield, peak wind gusts measured at 72 mph and Reef Road flooded to Howard Street. Overall, the municipalities of Essex County experienced flooding, power outages, evacuations, opening of shelters, and evacuations. The Passaic Valley Sewerage Commission treatment plant was flooded by the 12-foot storm surge and inoperable due to shutdowns and power loss. It released an estimated 400 to 500 million gallons of untreated wastewater into Newark Bay for several days, with the total amount discharged to be in the billions of gallons.

Source: FEMA 2014; NHC 2013; Input from Planning Committee
MLLW Mean Lower Low Water
Mph miles per hour

NJDEP New Jersey Department of Environmental Protection
yd^3/ft Cubic Yards per Feet

E.2.2 Coastal Storm

Table E.2.2-1. Coastal Storm Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
April 15-17, 2007	Severe Storm and Inland and Coastal Flooding (Nor'Easter)	DR-1694	Yes	A Nor'Easter brought heavy rain that caused widespread and significant river, stream, and urban flooding of low lying and poor drainage areas. Flooding resulted in two deaths and approximately $19 million damages. Rainfall totals ranged from 2.16 inches at Canoe Brook to 8.08 inches at Garret Mountain. In Essex County, rainfall totals ranged from 4.56 inches at the Orange Reservoir to 7.36 inches at Verona. Newark Airport had 6.63 inches of rain. Roads were closed throughout the County. There were widespread power outages and flooding of roadways and homes. There were evacuations in Fairfield Township due to flooded areas of the Township. In Belleville Township, a man was found next to his car on a flooded street. Overall, the County had approximately $4 million in damages from this event.
September 6-7, 2008	Tropical Storm Hanna	N/A	N/A	Tropical Storm Hanna impacted northeast New Jersey, making landfall near the Nassau/Suffolk County border on September 6th. Rainfall totals for this event ranged from 2.52 inches to 5.5 inches throughout New Jersey. The highest sustained wind speed of 39 mph and a peak gust of 45 mph was recorded at Newark Airport (Essex County). In Essex County, trees were reported down. Wind gusts ranged from 30 mph at Caldwell Airport to 45 mph at Newark International Airport. Rainfall totals in Essex County ranged from 3.75 inches at Newark Airport to 4.5 inches at the flood warning system gage in Canoe Brook. In the City of Newark, Meeker Avenue and Elizabeth Avenue were closed with cars floating due to flash flooding. McCarter Highway was closed due to flooding and Routes 1 and 9 were closed with cars stalled in flood waters. The Third River at Bloomfield exceeded its flood stage of 6 feet. The River crested at 7.37 feet and fell below flood stage on the 7th. The Peckman River at Verona exceeded its flood stage of 3.5 feet and crested at 4.10 feet. Water rescues were performed on Cortland Street in Belleville.
August 26 – September 5,	Hurricane Irene	DR-4021	Yes	Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on

Table E.2.2-1. Coastal Storm Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
2011				August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. The heavy rain from the storm caused record-breaking floods on many streams throughout the State. Thirty-nine of the 94 USGS gages with greater than or equal to 20 years of record, had record high peaks. Thirty-three gages experienced peaks equal to or greater than the 100-year recurrence interval. NWS climate site at Newark recorded 8.92 inches of rain. In Essex County, in West Orange Township, nearly 15 homes were damaged from fallen trees. Emergency crews responded to 120 calls and closed several streets. Rainfall totals ranged from 7.32 inches in Essex Fells to 9.96 inches in Orange; with 7.69 inches falling at Newark Airport which was the highest one-day total for Newark Airport. Peak wind gusts of 40 mph and 61 mph were recorded at Caldwell and Newark Airports, respectively. In Belleville, downed trees were reported on Watchung Avenue. Overall, the municipalities experienced flooding, downed trees, power outages, flooding, evacuations, and over $1.8 million in clean-up and other costs to the municipalities. The Passaic River gage at the Passaic Valley Sewage Commission recorded a peak stage of 7.11 feet, 0.64 feet higher than the previous peak of record on March 13, 2010.
October 26 – November 8, 2012	Hurricane Sandy	DR-4048	Yes	As storm surge from Sandy was pushed into the New York and Raritan Bays, sea water piled up within the Hudson River and coastal waterways and wetlands of northeastern New Jersey, including Newark Bay, Passaic and Hackensack Rivers, Kill van Kull, and Arthur Kill. Mandatory evacuations of people living along the coasts and rivers in Union, Essex, and Hudson Counties. In Essex County, inundations of four to six feet were measured across Newark Bay in Elizabeth and the area around Newark Airport. Storm tide at Newark was 11.6 feet with an estimated inundation (maximum depth of water on land) of 3.5 feet. The City of Newark had 7.65 inches of rainfall. Peak wind gusts ranged from 70 mph at Caldwell Airport to 78 mph at Newark Airport. In Fairfield, peak wind gusts measured at 72 mph and Reef

Table E.2.2-1. Coastal Storm Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				Road flooded to Howard Street. Overall, the municipalities of Essex County experienced flooding, power outages, evacuations, opening of shelters, and evacuations. County residents were without power for six days. Other losses to the municipalities included damage to water mains and pressure regulators, damage to roofs of municipal buildings, water in basements of residential and commercial properties, tree damage, and wind damage. Two hundred properties in Essex County were damaged. The Passaic Valley Sewage Commission reported that the treatment plant in Newark was inundated with at five feet of water during the storm and 840 million gallons of untreated sewage flowed into the Newark Bay. Another three billion gallons of partially treated sewage was sent into the bay before secondary treatment was restored.
November 7-8, 2012	Nor'Easter	N/A	N/A	A strong Nor'Easter caused high winds along the coast of New Jersey, heavy snow in east-central New Jersey, 10-foot waves along the ocean front and minor tidal flooding along the ocean front. This storm caused setbacks with restoration efforts caused by Hurricane Sandy. Snowfall totals averaged one to five inches in most of the State. In Essex County, snowfall amounts totaled 6.2 inches, which broke the record of 5.7 inches on November 22-23, 1989 in the City of Newark. For the remainder of Essex County, snowfall totals ranged from 4.3 inches in Bloomfield to 6 inches in Millburn. Peak wind gusts reached 44 mph in Montclair.
December 26-27, 2012	Nor'Easter	N/A	N/A	A deep area of low pressure approached from the southeast and pass just south of Long Island. High winds from this Nor'Easter resulted in scatter damage throughout eastern Essex County, with property damages totaling $1,000. No injuries or fatalities were associated with this Nor'Easter. This storm brought heavy rain to parts of Essex County, with totals ranging from 1.44 inches at Caldwell Airport to 1.84 inches at Newark Airport. Peak wind gust of 44 mph was recorded at Newark Airport. In the City of Newark, wires were down on Morton Street.
February 13-14, 2014	Nor'Easter	N/A	N/A	In Essex County, snowfall totals ranged from 11.8 inches in Maplewood Township and 15.5 inches in West Orange Township. Heavy wet snow likely caused a roof collapse in Cedar Grove Township on Pompton Avenue.

Source: FEMA 2014; NCDC 2013; NWS 2014; SPC 2012; NJ HMP 2012; USGS 2011; NHC 2012; NOAA 2012
DR Disaster Declaration (FEMA)
FEMA Federal Emergency Management Agency
Mph miles per hour
N/A Not Applicable

Hurricane Sandy

Hurricane Sandy caused widespread damage after it came inland near Atlantic City on October 29, 2012. It was a Category 1 hurricane as it approached the New Jersey coastline and a post-tropical cyclone as it came ashore near Atlantic City. The storm brought hurricane-force wind gusts to coastal and inland sections, nearly a foot of rain in southern New Jersey, and a record storm surge along the coast and in adjacent waterbodies. Hurricane Sandy impacted roadways, rail and air transportation, and the power grid across the State.

In Essex County, freight movement at Port Authority facilities in Newark and County and regional facilities located in vulnerable areas, Essex County's municipalities, residents and businesses also suffered losses from wind and water damage. The most significant riverine flooding area in Essex County is related to the large Flood Hazard (A Zone) along the western Passaic River corridor in Fairfield, West Caldwell, Roseland, Livingston and Millburn. There was less direct exposure along the eastern Passaic River corridor except where the River becomes tidally influenced in parts of Nutley and Belleville along State Highway 21 and in portions of the downtown and Ironbound in Newark. Townships such as Montclair, Bloomfield and Nutley, located along Toney's Brook and the Third River, also experienced property losses due to flooding during Sandy and Irene. The Essex County Board of Taxation identified substantial ratable loses because of Hurricane Sandy. Table E.2.2-2 outlines the amount of ratable loss due to the storm in Essex County.

Table E.2.2-2. Hurricane Sandy Ratable Loss Identified in Essex County

Municipality	Ratable Loss
Belleville	$259,600
Bloomfield	$77,200
Essex Fells	$394,800
Irvington	$104,000
Livingston	$141,800
Millburn	$172,900
Montclair	$2,005,900
Nutley	$228,600
South Orange	$174,500
West Orange	$549,300
Total	**$4,108,600**

Source: Essex County Board of Taxation, 2013

Hurricane Sandy also brought economic impacts associated with the storm, including loss of wages. Rutgers University's School of Public Affairs and Administration in Newark recently completed the "The Impact of Superstorm Sandy on New Jersey Towns and Households" in October of 2013. This report provided and in-depth analysis of the lost wages. The report indicated that there was an approximate $59 million-dollar loss in wages as a result of Hurricane Sandy in the County. The report also identified that there was an approximate average of six days of power loss in the County. The estimate was based on the average number of days the public schools were closed in the County.

E.2.3 Drought

Agriculture-related drought disasters are quite common. One-half to two-thirds of the counties in the U.S. have been designated as disaster areas in each of the past several years. The USDA Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans to producers suffering losses in those counties and in counties that are contiguous to a designated county. Between 2012 and 2014, New Jersey has been included in six USDA declarations. Of those six declarations, Essex County has not been included in any of the declarations.

Table E.2.3-1. Drought Incidents in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
2010	Drought	N/A	N/A	During the summer and fall, New Jersey experienced its hottest and 10th driest summer since 1895. The drought watch originally was declared for Bergen, Essex, Hudson, Morris, and Passaic Counties, then was expanded statewide. It was the first time since 2005 that a statewide drought watch had been declared. The drought continued through the summer and into the fall until a wet October led to the cancellation of the drought watch on October 26, 2010. The drought was taxing for New Jersey farmers and the U.S. Secretary of Agriculture Thomas Vilsack declared all counties in southern, central and northwest New Jersey to be natural disaster areas. The declaration made farm operators eligible for assistance from the Farm Service Agency. The assistance included low interest loans which could cover up to 100% of the dollar value of the crop losses.

Source: NOAA-NCDC 2014; FEMA 2014

E.2.4 Earthquake

Table E.2.4-1 summarizes the earthquake events from 2007 to 2014.

Table E.2.4-1. Earthquake Events in New Jersey, 2007 to 2014

Date(s) of Event	Magnitude	Location	Losses/Impacts
06/28/2007	2.1	7 km East of Fairfield, NJ	No reference and/or no damage reported.
02/03/2009	3.0	3.5km South-Southwest of Rockaway, NJ	There were reports of people having felt this earthquake throughout New Jersey.
02/14/2009	2.4	5 km North-Northeast of Boonton, NJ	There were reports of people having felt this earthquake throughout New Jersey.
2/18/2009	1.1	3 km South-Southwest of Kinnelon, NJ	No reference and/or no damage reported.
2/16/2009	1.4	1 km East-Southeast of Oradell, NJ	No reference and/or no damage reported.
2/16/2009	2.3	2 km South-Southeast of Dover, NJ	No reference and/or no damage reported.
07/01/2009	2.8	2.25km East-Southeast of Pennsville, NJ	There were reports of people having felt this earthquake throughout New Jersey.

Table E.2.4-1. Earthquake Events in New Jersey, 2007 to 2014

Date(s) of Event	Magnitude	Location	Losses/Impacts
12/21/2009	2.3	13 km South of Phillipsburg, NJ	No reference and/or no damage reported.
12/26/2009	2.0	8 km Northwest of Morris Plains, NJ	No reference and/or no damage reported.
02/05/2010	1.5	3 km Northwest of Far Hills, NJ	No reference and/or no damage reported.
02/07/2010	1.2	3 km Northwest of far Hills, NJ	No reference and/or no damage reported.
02/10/2010	2.2	1 km West of Wanaque	No reference and/or no damage reported.
02/21/2010	2.6	Gladstone, NJ	This earthquake hit just before 9 a.m. and prompted numerous phone calls to police. No damages were reported. Many people in New Jersey reported having felt this earthquake.
02/21/2010	2.3	Gladstone, NJ	This event was most likely an aftershock from the morning's earthquake. Numerous people in New Jersey reported having felt this earthquake.
06/06/2010	2.3	6 km Southeast of Sayreville, NJ	People reported having felt this earthquake throughout New Jersey.
12/25/2010	2.1	1 km West of Clifton, NJ	No reference and/or no damage reported.
05/08/2011	1.2	1 km Southwest of Clifton, NJ	No reference and/or no damage reported.
05/10/2011	1.9	2 km North of Mount Holly, NJ	No reference and/or no damage reported.
05/29/2011	1.3	3 km South of Fort Lee, NJ	No reference and/or no damage reported.
05/29/2011	1.9	24 km South-Southwest of Lakehurst, NJ	No reference and/or no damage reported.
06/09/2011	1.6	2 km Southeast of S. Plainfield, NJ	No reference and/or no damage reported.
08/23/2011	5.8	Central Virginia	A moderate earthquake occurred in central Virginia and was felt throughout most of the east, from Georgia to southern Canada and from Indiana to coastal Maine. It was followed by four aftershocks. In New Jersey, the intensity ranged from 1 to 4 (weak to light). Areas underlain by thick silt and clay felt a stronger ground motion than did those where rock was very close to the surface. The quake was felt in South Brunswick and residents were calling 911 wanting to know what happened; some thought it was an explosion. It was also felt in the offices of Alcatel-Lucent in Murray Hill (Union County). Ceiling tiles fell out at a Sears store in Middletown. In Plainfield (Union County), employees in the Park Madison building were evacuated after the tremor. Union County's administration building in Elizabeth reported continuous shaking. In New Brunswick (Middlesex County), employees were evacuated from the County administration building. Atlantic City (Atlantic County) went into emergency mode with evacuations of high rises, hospitals, schools, casinos, and hotels. The County OEM received reports of a crack in a wall in a house and broken water pipe in a building. There were minor scattered power outages reported throughout the state.
07/17/2012	1.1	16 km Northwest of Morristown, NJ	No reference and/or no damage reported.
07/18/2012	1.1	18 km Northwest of	No reference and/or no damage reported.

Table E.2.4-1. Earthquake Events in New Jersey, 2007 to 2014

Date(s) of Event	Magnitude	Location	Losses/Impacts
		Morristown, NJ	
08/23/2012	1.2	1.4 km East of Ringwood, NJ	No reference and/or no damage reported.
11/05/2012	2.0	3 km Southwest of Mahwah, NJ	People reported having felt this earthquake in various parts of New Jersey.
11/23/2012	2.2	Greater Philadelphia Area/New Jersey	Numerous reports of people having felt the earthquake in southwestern New Jersey.

Source: *NJGWS 2013; USGS 2012d; Won-Young Kim, Lamont-Doherty Earth Observatory of Columbia University 1999*
*** *Location very poorly determined; may be uncertain by 50 miles.*
Note: *Events highlighted in green were epi-centered in Essex County*
km *Kilometers*
N/A *Not Applicable/Not Available*
NJ *New Jersey*
NYC *New York City*
OEM *Office of Emergency Management*

Table E.2.4-2 summarizes critical facilities located in the liquefaction class 4 area.

Table E.2.4-2. Critical Facilities Located in Liquefaction Class 4 by Municipality

Municipality	Airport	Bus	Chemical Storage	Correctional Institution	Dam	Electric Power	Highway Bridge	Newark Housing Authority	Nursing Home	Oil Facility	Police	Port	Potable Pump Station	Potable Treatment	Safety	Shelter	Train Station	Transportation	Wastewater Treatment Plant
Belleville (T)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Fairfield (T)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
Millburn (T)	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Newark (C)	1	2	2	2	0	4	2	1	0	4	2	4	0	0	0	0	1	0	2
Nutley (T)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
West Caldwell (T)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Total	**1**	**2**	**2**	**2**	**1**	**4**	**2**	**1**	**1**	**4**	**2**	**4**	**1**	**1**	**1**	**1**	**1**	**3**	**2**

Table E.2.4-3 summarizes critical facilities located in the NEHRP soil class D and E.

Table E.2.4-3. Number of Critical Facilities Located in NEHRP Soil Class D and E Areas – Part One

Municipality	Airport	Bus	Chemical Storage	Church	College	Commercial	Communication	Correctional Institution	County Building	Dam	DPW	Electric Power	Electric Substation	EMS	EOC	Fire	Government	Hazardous Materials	Health Care
Belleville (T)	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Bloomfield (T)	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0
Caldwell (B)	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Cedar Grove (T)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
East Orange (C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Essex Fells (B)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Fairfield (T)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	1
Livingston (T)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Millburn (T)	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0
Newark (C)	1	3	3	0	1	3	2	2	0	0	0	5	0	1	0	6	3	0	0
Nutley (T)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0
Roseland (B)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Verona (T)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
West Caldwell (T)	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2	0
West Orange (T)	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Total	**2**	**3**	**3**	**3**	**2**	**5**	**2**	**2**	**2**	**6**	**1**	**5**	**2**	**4**	**3**	**10**	**11**	**3**	**1**

Table E.2.4-4. Number of Critical Facilities Located in NEHRP Soil Class D and E Areas – Part Two

Municipality	Highway Bridge	Hospital	Light Rail	Newark Housing Authority	Nursing Home	Oil Facility	Park	Police	Port	Potable Pump Station	Potable Treatment	Potable Well	Public Health Department	Retail	School	Senior Housing	Shelter	Train Station	Transportation	Wastewater Treatment Plant	Wastewater Pump
Belleville (T)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0
Bloomfield (T)	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
Caldwell (B)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cedar Grove (T)	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
East Orange (C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Essex Fells (B)	0	0	0	0	0	0	0	0	0	2	1	6	0	0	0	0	0	0	0	0	0
Fairfield (T)	0	0	0	0	0	0	0	1	0	4	0	0	0	0	7	0	2	0	8	0	0
Livingston (T)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Millburn (T)	0	0	0	0	0	0	1	1	0	2	2	1	0	1	3	0	2	0	0	0	4
Newark (C)	2	2	7	10	0	4	0	8	4	0	0	0	0	2	23	0	0	2	0	2	0
Nutley (T)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0
Roseland (B)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Verona (T)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0
West Caldwell (T)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	1	1
West Orange (T)	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1
Total	**2**	**2**	**7**	**10**	**4**	**4**	**1**	**12**	**4**	**8**	**3**	**11**	**1**	**3**	**46**	**1**	**5**	**3**	**9**	**5**	**6**

E.2.5 Extreme Temperature

The NWS Forecast Office operates an online annual temperature extremes database, known as "NOWData". The data set contains annual maximum and minimum temperature records for stations in the U.S. Each station has a cooperative observer system identification number (coop number). In the New York City Cooperative Area, there are over 25 stations, including one station in the City of Newark. There may be some potential problems with the data collected at the stations. The values of the all-time records for stations with brief histories are limited in accuracy and could vary from nearby stations with longer records. Although the data sets have been through quality control, there is still a need for more resources to quality control extremes. The record sets are for single stations in the cooperative observer network and are limited to the time of operation of each station under one coop number. The records for a place may need to be constructed from several individual station histories. Some of the data may vary from NWS records due to NWS using multiple stations and additional sources like record books (MRCC, Date Unknown).

Based on the NWS data, Table E.2.5-1 presents the extreme cold (minimum) and hot (maximum) temperature records for the three weather stations located in Essex County.

Table E.2.5-1. MRCC Temperature Extremes

Station Name	Average Maximum (°F)	Average Minimum (°F)	Mean (°F)	Highest Max (°F)	Date	Lowest Minimum (°F)	Date
Canoe Brook	63	40	51.4	107	2010-07-07	-26	1934-02-09
Essex Fells Service Building	62	40	51	105	2001-08-10	-14	1985-01-21
Newark International Airport	63	46	54.4	108	2011-07-22	-14	1934-02-09

Source: MRCC 2014

For the 2015 HMP, known extreme temperature events that have impacted Essex County between 2007 and 2014 are identified in Table E.2.5-2.

Table E.2.5-2. Extreme Temperature Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
July 4 to 7, 2010	Extreme Heat	N/A	N/A	Temperatures ranged from 90°F to 105°F. One fatality was reported from this event. In Newark, four straight days of temperatures ≥100°F (101°F, 102°F, 103°F, and 101°F respectively). This led to 65 consecutive hours of temperatures of ≥80°F. The low temperature on July 6 was 84°F. At the Canoe Brook weather station, the highest temperature on record was recorded on July 7th. The maximum temperature at this station reached 107°F.
July 21 to 24, 2011	Heat Wave	N/A	N/A	One of the most oppressive heat waves since July 1995. It caused two deaths and hundreds of heat-related injuries. Many locations had high temperatures that were in excess of 100°F. July 22 was the hottest, with heat index values of 110°F to 120°F. Many counties and municipalities opened cooling centers for its residents. In Essex County, at Newark Airport on July 22nd, the

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				temperature reached 108°F which broke the all-time record and the daily record. The minimum temperature for that day was 86°F. Another record was set on July 23rd at the airport, with temperatures reaching 102°F and the minimum temperature was only 86°F.
Winter 2013/2014	Cold	N/A	N/A	Enduring wind chill resulted in a December through March average statewide temperature of 31.9°F. This was the 20th coldest period on record

Source: NOAA-NCDC 2013; ONJSC Rutgers University 2013a; MRCC 2014; NWS 2014
°F degrees Fahrenheit

E.2.6 Flood

The 2007 HMP did not discuss specific flooding events that occurred in Essex County. For the 2015 HMP update, flood events were summarized from 2007 to 2014. Please note, between 2007 and 2014 there have been no dam failures or incidents in Essex County and the table will not include dam failure or incident events.

Table E.2.6-1. Flooding Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
April 15-17, 2007	Severe Storm and Inland and Coastal Flooding (Nor'easter)	DR-1694	Yes	A Nor'easter brought heavy rain that caused widespread and significant river, stream, and urban flooding of low lying and poor drainage areas. Flooding resulted in two deaths and approximately $19 million damages. Rainfall totals ranged from 2.16 inches at Canoe Brook to 8.08 inches at Garret Mountain. In Essex County, rainfall totals ranged from 4.56 inches at the Orange Reservoir to 7.36 inches at Verona. Newark Airport had 6.63 inches of rain. Roads were closed throughout the County. There were widespread power outages and flooding of roadways and homes. There were evacuations in Fairfield Township due to flooded areas of the Township. In Belleville Township, a man was found next to his car on a flooded street. Overall, the County had approximately $4 million in damages from this event.
September 6-7, 2008	Tropical Storm Hanna	N/A	N/A	Tropical Storm Hanna impacted northeast New Jersey, making landfall near the Nassau/Suffolk County border on September 6th. Rainfall totals for this event ranged from 2.52 inches to 5.5 inches throughout New Jersey. The highest sustained wind speed of 39 mph and a peak gust of 45 mph was recorded at Newark Airport (Essex County). In Essex County, trees were reported down. Wind gusts ranged from 30 mph at Caldwell Airport to 45 mph at Newark International Airport. Rainfall totals in Essex County ranged from 3.75 inches at Newark Airport to 4.5

Table E.2.6-1. Flooding Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				inches at the flood warning system gage in Canoe Brook. In the City of Newark, Meeker Avenue and Elizabeth Avenue were closed with cars floating due to flash flooding. McCarter Highway was closed due to flooding and Routes 1 and 9 were closed with cars stalled in flood waters. The Third River at Bloomfield exceeded its flood stage of 6 feet. The River crested at 7.37 feet and fell below flood stage on the 7th. The Peckman River at Verona exceeded its flood stage of 3.5 feet and crested at 4.10 feet. Water rescues were performed on Cortland Street in Belleville.
March 12 – April 15, 2010	Severe Storms and Flooding	DR-1897	Yes	Between March 12th and 15th, heavy rain fell across parts of New Jersey. In Essex County, rainfall totals ranged from 4.06 inches in Caldwell Township to 5.19 inches in Newark. Peak wind gusts ranged from 45 mph in Newark to 55 mph in Caldwell Township. Numerous trees were down in Maplewood and Millburn Townships and in the Village of South Orange. In Cedar Grove Township, 0.25-inch hail covered the ground temporarily. Between March 22nd and 23rd, heavy rain fell in Essex County, with totals ranging from 1.20 inches in Newark to 2.16 inches in West Orange Township. Between March 29th and March 31st, heavy rain fell in Essex County with totals ranging from 3.23 inches in Essex Fells Township to 3.97 inches in Verona Township. Peak wind gust of 43 mph was reported in Newark.
March 6-7, 2011	Heavy Rain	N/A	N/A	Rainfall totals in Essex County ranged from 1.97 inches at Newark Airport to 3.40 inches in Verona Township. In Bloomfield Township, flooding was reported on I-280 eastbound ramp to Exit 9 (Pleasant Ave/CR-660). The ramp was closed and detoured.
August 26 – September 5, 2011	Hurricane Irene	DR-4021	Yes	Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. The heavy rain from the storm caused record-breaking floods on many streams throughout the State. Thirty-nine of the 94 USGS gages with greater than or equal to 20 years of record, had record high peaks. Thirty-three gages experienced peaks equal to or greater than the 100-year recurrence interval. NWS climate site at Newark recorded 8.92 inches of rain.

Table E.2.6-1. Flooding Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				In Essex County, in West Orange Township, nearly 15 homes were damaged from fallen trees. Emergency crews responded to 120 calls and closed several streets. Rainfall totals ranged from 7.32 inches in Essex Fells to 9.96 inches in Orange; with 7.69 inches falling at Newark Airport which was the highest one-day total for Newark Airport. Peak wind gusts of 40 mph and 61 mph were recorded at Caldwell and Newark Airports, respectively. In Belleville, downed trees were reported on Watchung Avenue. Overall, the municipalities experienced flooding, downed trees, power outages, flooding, evacuations, and over $1.8 million in clean-up and other costs to the municipalities. The Passaic River gage at the Passaic Valley Sewage Commission recorded a peak stage of 7.11 feet, 0.64 feet higher than the previous peak of record on March 13, 2010.
October 26 – November 8, 2012	Superstorm Sandy	DR-4048	Yes	As storm surge from Sandy was pushed into the New York and Raritan Bays, sea water piled up within the Hudson River and coastal waterways and wetlands of northeastern New Jersey, including Newark Bay, Passaic and Hackensack Rivers, Kill van Kull, and Arthur Kill. Mandatory evacuations of people living along the coasts and rivers in Union, Essex, and Hudson Counties. In Essex County, inundations of four to six feet were measured across Newark Bay in Elizabeth and the area around Newark Airport. Storm tide at Newark was 11.6 feet with an estimated inundation (maximum depth of water on land) of 3.5 feet. The City of Newark had 7.65 inches of rainfall. Peak wind gusts ranged from 70 mph at Caldwell Airport to 78 mph at Newark Airport. In Fairfield, peak wind gusts measured at 72 mph and Reef Road flooded to Howard Street. Overall, the municipalities of Essex County experienced flooding, power outages, evacuations, opening of shelters, and evacuations. The Passaic Valley Sewage Commission reported that the treatment plant in Newark was inundated with at five feet of water during the storm and 840 million gallons of untreated sewage flowed into the Newark Bay. Another three billion gallons of partially treated sewage was sent into the bay before secondary treatment was restored.
April 29 – May 1, 2014	Heavy Rain	N/A	N/A	Rainfall totals in Essex County ranged from 2.36 inches in the Borough of Essex Fells to 5.36 inches at Newark Airport. Many roads in Newark were closed due to flooding. Lanes were closed along the New Jersey Turnpike in Newark as well.

Source: FEMA 2014; NCDC 2013; NWS 2014; SPC 2012; NJ HMP 2012; USGS 2011; NHC 2012; NOAA 2012
DR Disaster Declaration (FEMA)
FEMA Federal Emergency Management Agency
Mph miles per hour

N/A *Not Applicable*

E.2.7 Geological Hazards

Table E.2.7-1. Geological Hazard Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
June 22, 2008	Debris flow	N/A	N/A	In West Orange Township, a contractor was buried to the waist and trapped for three hours when a storm caused a mudslide in the trench he was digging.
Unknown	Rockfall	N/A	N/A	In West Orange Township, the roadway cut was highly fractured and caused loose rock fragments to fall on the road due to weathering.
Unknown	Rockfall	N/A	N/A	Rockfall area along Interstate 280 in West Orange Township
Unknown	Rockfall	N/A	N/A	Rockfall along Interstate 280 in East Orange.
Unknown	Rockfall	N/A	N/A	Large rockfall during the night in West Orange Township due to weathering, fragments spilled onto the shoulder and into half of the middle lane.
Unknown	Rockfall	N/A	N/A	Small rockfall in West Orange Township due to weathering.
Unknown	Rockfall	N/A	N/A	Small rockfall in West Orange Township due to weathering.
Unknown	Slump	N/A	N/A	In Millburn Township, a 60-foot tall, 200-foot long streambank slump area was reactivated during heavy rains. The slumps here were active since at least 1970s.

Source: *NJDEP 2012; NOAA-NCDC 2013*
N/A *Not applicable*
NCDC *National Climatic Data Center*
NJDEP *New Jersey Department of Environmental Protection*
NOAA *National Oceanic and Atmospheric Administration*

E.2.8 Severe Weather

Table E.2.8-1. Severe Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
April 15-17, 2007	Severe Storm and Inland and Coastal Flooding (Nor'easter)	DR-1694	Yes	A Nor'Easter brought heavy rain that caused widespread and significant river, stream, and urban flooding of low lying and poor drainage areas. Flooding resulted in two deaths and approximately $19 million damages. Rainfall totals ranged from 2.16 inches at Canoe Brook to 8.08 inches at Garret

Table E.2.8-1. Severe Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				Mountain. In Essex County, rainfall totals ranged from 4.56 inches at the Orange Reservoir to 7.36 inches at Verona. Newark Airport had 6.63 inches of rain. Roads were closed throughout the County. There were widespread power outages and flooding of roadways and homes. There were evacuations in Fairfield Township due to flooded areas of the Township. In Belleville Township, a man was found next to his car on a flooded street. Overall, the County had approximately $4 million in damages from this event.
May 16, 2007	High Wind	N/A	N/A	Thunderstorms developed, causing a microburst that moved through Essex, Hudson and Union Counties during the afternoon of the 16th. Strong winds caused a tree to fall on a house in Newark.
June 21-22, 2007	Severe Thunderstorms	N/A	N/A	Severe thunderstorms produced damaging winds and large hail in Essex County. High winds downed trees and wires across multiple locations in Newark. A tree fell through a home in Newark, injuring two people. Many cars were damaged due to fallen trees. Nickel size hail was reported in Newark.
August 17, 2007	Hail	N/A	N/A	Severe thunderstorms developed over northeast New Jersey, causing nickel size hail to fall in North Caldwell in Essex County.
March 4, 2008	Strong Wind	N/A	N/A	Strong winds downed trees, closing Clinton Road in West Caldwell.
May 27, 2008	Wind	N/A	N/A	Isolated severe weather moved across Essex County. In Maplewood Township, wind gusts of 50 mph were recorded, and downed power lines were reported throughout the Township.
May 31, 2008	Wind	N/A	N/A	An isolated severe thunderstorm developed across Essex County, causing strong winds to impact the County. A large tree fell onto other trees which fell onto a house and a wind gust of 50 mph was reported in Livingston Township.
June 10, 2008	Severe Thunderstorms	N/A	N/A	A strong cold front moved across northeast New Jersey causing multiple severe thunderstorms across the region. In Essex County, trees fell on 30 cars and numerous homes in Nutley and Belleville Townships. Nickel size hail was reported in Belleville Township as well. Wind gusts ranged from 52 mph to 70 mph; 0.88" sized hail fell in the County. Bloomfield Township reported road closures, power outages, and schools were closed. In the City of East Orange, the City was severely impacted due to falling trees and power outages. Property damage was estimated at $158,000 in the County.
June 22, 2008	Hail	N/A	N/A	Severe thunderstorms moved across northeast New Jersey, producing nickel size hail along the New Jersey Turnpike in

Table E.2.8-1. Severe Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				Newark and golf ball size hail at Newark Airport.
August 15, 2008	Lightning	N/A	N/A	Severe thunderstorms moved across portions of northeast New Jersey. In Essex County, a lightning strike caused major damage to a home on North Street in the City of Newark. In Roseland Borough, there were power outages throughout. Lightning struck and damaged the first aid building and the fire/DPW building. There was also damage to the Canoe Brook Pump Station. Approximately $50,000 in property damage.
December 25, 2008	Strong Wind	N/A	N/A	Gusty northwest winds of 40 to 50 mph downed a 40-foot trees onto a car traveling on the Garden State Parkway in Bloomfield; killing two people and injuring two people.
June 30, 2009	Hail	N/A	N/A	Thunderstorms formed across portions of northeastern New Jersey, producing lightning, high winds, large hail, and flash flooding. In Essex County, roads were closed due to flooding in Caldwell; ping pong size hail was reported in Upper Montclair; and a large tree fell in Belwood Park. The County had approximately $1,000 in damages from this storm.
July 26, 2009	Severe Thunderstorms	N/A	N/A	Multiple severe thunderstorms produced flash flooding across northeast New Jersey. Numerous trees and power lines were reported down in Essex County. In Newark, lightning struck four people under a tree, killing one person and injuring three. 0.75" to 1" sized hail fell across in the County. Approximately $8,500 in property damage.
August 12, 2009	Heavy Rainfall	N/A	N/A	Slow moving thunderstorms developed, which resulted in very heavy rainfall and flash flooding across portions of Essex County. Winds of 30 to 40 mph; downed trees; approximately $10,000 in property damage.
December 9, 2009	Hail	N/A	N/A	Large hail fell in northeast New Jersey, with golf ball size hail reported in West Caldwell.
March 12 – April 15, 2010	Severe Storms and Flooding	DR-1897	Yes	Between March 12th and 15th, heavy rain fell across parts of New Jersey. In Essex County, rainfall totals ranged from 4.06 inches in Caldwell Township to 5.19 inches in Newark. Peak wind gusts ranged from 45 mph in Newark to 55 mph in Caldwell Township. Numerous trees were down in Maplewood and Millburn Townships and in the Village of South Orange. In Cedar Grove Township, 0.25-inch hail covered the ground temporarily. Between March 22nd and 23rd, heavy rain fell in Essex County, with totals ranging from 1.20 inches in Newark to 2.16 inches in West Orange Township. Between March 29th and March 31st, heavy rain fell in Essex County with totals ranging from 3.23 inches in Essex Fells Township to 3.97 inches in Verona Township. Peak wind gust of 43 mph was reported in Newark.

Table E.2.8-1. Severe Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
October 1, 2010	Strong Wind	N/A	N/A	Strong winds moved across the area, producing wind gusts of up to 52 mph at Newark Airport and causing approximately $20,000 in property damage. The City of East Orange was severely impacted due to fallen trees and power outages.
October 11, 2010	Heavy Rain, Flash Flooding, and Hail	N/A	N/A	Strong to severe thunderstorms moved across the tri-state area, producing penny to quarter size hail, heavy rain, and flash flooding in Essex County. Many roads were flooded throughout West Caldwell. A vehicle was trapped in high waters on Belleville Avenue in Belleville.
October 16, 2010	Strong Wind	N/A	N/A	Strong wind gusts of around 40 to 50 mph impacted Essex County. A wind gust of 46 mph was measuring at Newark Airport. The winds caused approximately $20,000 in property damage in the County.
March 6-7, 2011	Heavy Rain	N/A	N/A	Rainfall totals in Essex County ranged from 1.97 inches at Newark Airport to 3.40 inches in Verona Township. In Bloomfield Township, flooding was reported on I-280 eastbound ramp to Exit 9 (Pleasant Ave/CR-660). The ramp was closed and detoured.
April 12, 2011	Thunderstorm	N/A	N/A	A cold pool of air triggered thunderstorms across northeast New Jersey, with one lightning strike near Newark. Lightning struck a house in Cedar Grove, causing a fire and. The County had approximately $5,000 in damages from this storm.
June 17, 2011	Thunderstorm, Lightning, and Hail	N/A	N/A	Isolated strong to severe storms crossed over northeast New Jersey, producing penny to quarter size hail in Essex County. Lightning struck a home in Montclair, causing a fire. 0.75" (West Caldwell) to 1" (Montclair) sized hail fell in the County. The County had approximately $10,000 in damages from this storm.
October 29, 2011	Severe Storm	DR-4048	Yes	Rain began to fall in southern New Jersey early on October 29, 2011 and spread north. Some northern areas of the State saw the precipitation begin as snow and during the morning, the rain turned to snow in central and northern New Jersey. Moderate to heavy snow continued into the afternoon, mixing with sleet in lower elevations. Once the snow tapered off during the morning of October 30, 2011, New Jersey had experienced its largest October snowstorm since the late 18th century. Once several inches of snow had accumulated, tree branches and entire trees began to snap and crash onto homes, power lines and cars. By the end of the storm, over 600,000 customers lost power, with some remaining without power for over a week. In Essex County, snowfall totals ranged from 4.9 inches in Belleville Township to 8 inches in West Orange Township. In Verona Township, the wastewater treatment plant flooded and sustained damage to its system. Many municipalities reported road closures, loss of utilities, closed schools and debris

Table E.2.8-1. Severe Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				removal. Several residents were evacuated from their homes in Roseland Borough. Shelters were open throughout the County as well. Overall, the County had over $1.5 million in clean-up costs and other expenses to the municipalities.
August 5, 2012	Wind	N/A	N/A	Severe, isolated thunderstorms formed over Passaic and Essex County. Wind gust of 52 mph was reported at Newark Airport.
September 18, 2012	Strong Wind	N/A	N/A	Strong winds developed, downing numerous trees and large branches across Essex County. A wind gust of 46 mph was reported at Newark Airport. The strong winds caused approximately $100,000 in property damages in the County.
September 22, 2012	Wind	N/A	N/A	A line of showers and thunderstorms moved towards northeast New Jersey, with some strong thunderstorms at times. In Essex County, wind gusts of 52 mph were reported in Essex Fells Borough. Tree limbs and wires down on Roseland Avenue in the Borough. The storms caused approximately $1,000 in property damage.
October 26 – November 8, 2012	Hurricane Sandy	DR-4048	Yes	As storm surge from Sandy was pushed into the New York and Raritan Bays, sea water piled up within the Hudson River and coastal waterways and wetlands of northeastern New Jersey, including Newark Bay, Passaic and Hackensack Rivers, Kill van Kull, and Arthur Kill. Mandatory evacuations of people living along the coasts and rivers in Union, Essex, and Hudson Counties. In Essex County, inundations of four to six feet were measured across Newark Bay in Elizabeth and the area around Newark Airport. Storm tide at Newark was 11.6 feet with an estimated inundation (maximum depth of water on land) of 3.5 feet. The City of Newark had 7.65 inches of rainfall. Peak wind gusts ranged from 70 mph at Caldwell Airport to 78 mph at Newark Airport. In Fairfield, peak wind gusts measured at 72 mph and Reef Road flooded to Howard Street. Overall, the municipalities of Essex County experienced flooding, power outages, evacuations, opening of shelters, and evacuations. The Passaic Valley Sewage Commission reported that the treatment plant in Newark was inundated with at five feet of water during the storm and 840 million gallons of untreated sewage flowed into the Newark Bay. Another three billion gallons of partially treated sewage was sent into the bay before secondary treatment was restored.
January 31, 2013	Strong Winds	N/A	N/A	High south winds resulted in areas of damage and disruptions to power. At Newark Airport, a wind gust of 59 mph was measured, with sustained winds of 45 mph reported. In Bloomfield, a tree was knocked down onto a home. Scattered power outages were noted throughout the County. The winds caused approximately $100,000 in property damage in Essex County.
March 6, 2013	Strong Winds	N/A	N/A	Strong winds struck Essex County, downing power lines in Livingston and causing approximately $10,000 in property

Table E.2.8-1. Severe Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				damage.
May 8, 2013	Heavy Rain / Flash Flooding	N/A	N/A	Rainfall totals ranged from 0.97 inches at Caldwell Airport to 2.51 inches in Bloomfield.
May 11, 2013	Wind / Thunderstorms	N/A	N/A	Isolated severe thunderstorms struck northeast New Jersey bringing heavy rain, strong winds and flash flooding to the area. In Essex County, wind gusts ranged from 56 mph in East Orange to 61 mph in South Orange. Trees were reported down throughout the County. The storm caused approximately $5,000 in property damage.
June 6-8, 2013	Heavy Rain	N/A	N/A	Rainfall totals ranged from 2.76 inches in Essex Fells to 3.91 inches at Newark Airport.
July 7, 2013	Thunderstorms / Hail	N/A	N/A	Scattered showers and thunderstorms impacted northeast New Jersey, impacting Essex County. Trees and wires were down in Caldwell. A tree was down on a house on West Brook Road in Franklin. Power lines were down on Franklin Avenue in Nutley. Wind gusts in Essex County ranged from 52 to 61 mph. The storms caused approximately $5,000 in property damage.
September 12, 2013	Lightning	N/A	N/A	A possible lightning strike damaged the Glenwood School fire alarm in Millburn Township. This caused approximately $10,000 to $15,000 in repairs. Fire Watch was provided by the fire department to prevent school closures.
November 27, 2013	Rain and Wind	N/A	N/A	Rainfall totals ranged from 2.48 inches at Newark Airport to 3.77 inches in Cedar Grove. Peak wind gusts of 36 mph were measured at Newark Airport.
April 29 – May 1, 2014	Heavy Rain	N/A	N/A	Rainfall totals in Essex County ranged from 2.36 inches in the Borough of Essex Fells to 5.36 inches at Newark Airport. Many roads in Newark were closed due to flooding. Lanes were closed along the New Jersey Turnpike in Newark as well.

Source: NCDC 2013; ONJSC Rutgers University 2013; SPC 2014

DPW Department of Public Works
DR Major Disaster Declaration (FEMA)
FEMA Federal Emergency Management Agency
mph miles per hour
N/A Not Applicable
NCDC National Climatic Data Center
ONJSC Office of the New Jersey State Climatologist
SPC Storm Predication Center

E.2.9 Severe Winter Weather

The 2007 HMP did not discuss specific winter storms events that occurred in Essex County. For the 2015 HMP update, winter storm events were summarized from 2007 to 2014.

Table E.2.9-1. Severe Winter Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
March 16-17, 2007	Snow	N/A	N/A	Snowfall totals in Essex County ranged from 4 inches in West Orange Township to 7.1 inches in Montclair Township.
December 19-20, 2009	Heavy Snow	N/A	N/A	Snowfall totals in Essex County ranged from 7.1 inches in Cedar Grove Township to 11.2 inches in Newark. A peak wind gust of 44mph was recorded in Newark.
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	An intense low-pressure system spread snowfall across the region, with bands of heavy snow, thunderstorms and strong winds. This blizzard brought between 20 and 30 inches of snow across northeast New Jersey. Winds of 25 to 40 mph and gusts exceeded 60 mph also impacted the area. In Essex County, snowfall totals ranged from 21.1 inches in Cedar Grove Township to 24.8 inches in Belleville Township. A wind gust of 35 mph was recorded in Caldwell Borough.
January 11-12, 2011	Heavy Snow	N/A	N/A	Heavy snow fell across most of New Jersey from the early evening of January 11th through the early morning on the 12th. In northeast New Jersey, the band of snow was responsible for snowfall rates of three to four inches per hour and the final heavy snow totals of eight to 16 inches across the region. In Essex County, snowfall totals ranged from 8 inches in Bloomfield Township to 9.1 inches at Newark Airport.
January 26-27, 2011	Heavy Snow	N/A	N/A	Moderate to heavy snow fell across the region, with periods of snow falling at a rate of three to four inches per hour, resulting in totals of 15 to 20 inches across most of the region. Snowfall totals in Essex County ranged from 12 inches in West Orange Township to 18.9 inches at Newark Airport. A peak wind gust of 40 mph was measured at Newark Airport. This was the snowiest January on record for Newark.
October 29, 2011	Severe Storm	DR-4048	Yes	Rain began to fall in southern New Jersey early on October 29, 2011 and spread north. Some northern areas of the State saw the precipitation begin as snow and during the morning, the rain turned to snow in central and northern New Jersey. Moderate to heavy snow continued into the afternoon, mixing with sleet in lower elevations. Once the snow tapered off during the morning of October 30, 2011, New Jersey had experienced its largest October snowstorm since the late 18th century. Once several inches of snow had accumulated, tree branches and entire trees began to snap and crash onto homes, power lines and cars. By the end of the storm, over 600,000 customers lost power, with some

Table E.2.9-1. Severe Winter Weather Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				remaining without power for over a week. In Essex County, snowfall totals ranged from 4.9 inches in Belleville Township to 8 inches in West Orange Township. In Verona Township, the wastewater treatment plant flooded and sustained damage to its system. Many municipalities reported road closures, loss of utilities, closed schools and debris removal. Several residents were evacuated from their homes in Roseland Borough. Shelters were open throughout the County as well. Overall, the County had over $1.5 million in clean-up costs and other expenses to the municipalities.
November 7, 2012	Winter Weather	N/A	N/A	This storm came on the heels of Hurricane Sandy, producing heavy wet snow, strong winds and minor coastal flooding. Snowfall totals ranged from three to six inches across the region. In Essex County, 6.2 inches of snow was measured at Newark Airport.
February 8-9, 2013	Blizzard	N/A	N/A	In Essex County, snowfall totals ranged from 9.6 inches in Belleville Township to 14 inches in Verona Township. Twenty-four-hour snowfall totals in the County ranged from 8.3 inches in Montclair Township to 13.5 inches in West Caldwell Township.
February 13-14, 2014	Nor'Easter	N/A	N/A	In Essex County, snowfall totals ranged from 11.8 inches in Maplewood Township and 15.5 inches in West Orange Township. Heavy wet snow likely caused a roof collapse in Cedar Grove Township on Pompton Avenue.

Source: NOAA-NCDC 2014; NWS 2014; FEMA 2014
DR Disaster Declaration
FEMA Federal Emergency Management Agency
N/A Not Applicable
NCDC National Climatic Data Center
NOAA National Oceanic and Atmospheric Administration
NWS National Weather Service

E.2.10 Wildfire

The 2007 HMP did not discuss specific wildfire events that occurred in Essex County. For this 2015 HMP update, wildfire events were summarized from 2007 to 2014. Based on all sources used to research and identify wildfires in the County, there have been no wildfire incidents in Essex County between 2007 and 2014.

E.2.11 Civil Order Defense

Table E.2.11-1. Civil Disorders in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
March 7, 2010	Protest	N/A	N/A	Nicholas Botti, an animal welfare advocate, protested the treatment of animals by a circus outside of the Prudential Center. He was arrested because he refused to stand in the designated protest area.
July 20, 2013	Protest/Rally	N/A	N/A	Approximately 400 people rallied in the intersection of Broad and Court Streets in the City of Newark during a "Justice for Trayvon" rally. This protest was one of more than 100 throughout the U.S. held one week after George Zimmerman was found not guilty of murder charges in the killing of the 17-year-old. A call-and-response rang out outside the Peter W. Rodino Jr. Federal Building in Newark where the 400 people rallied to protest the not guilty verdict. It was a two-hour protest where people of all ages and races gathered to listen to speeches by religions leaders and group representatives.
April 3, 2014	Walkout/Protest	N/A	N/A	A student walkout was led towards City Hall to protest Governor Christie's recent superintendent appointee to Newark schools. Hundreds of students left school and gathered at Newark City Hall.
April 30, 2014	Protest	N/A	N/A	The firing of a teacher at West Side High School in the City of Newark led to a protest by students. Police were called by school officials when protesters began yelling and banging on hall doors.

E.2.12 Cyber Attack

While no major direct cyber-attacks have affected New Jersey or its counties, as mentioned, cyber terrorism is an emerging hazard that can impact the State's computer infrastructure and the systems and services that are provided to the public. Across the United States, concerns over cyber terrorism are growing; former FBI director Louis Freeh warns that cyber terrorism could have a crippling effect in the United States (ANI 2013).

A few smaller-scale attacks have occurred in New Jersey. Local animal rights extremists have carried out minor cyber-attacks, employing low-level techniques targeting Internet sites and e-mail systems of companies and businesses associated with animal research programs in New Jersey.

E.2.13 Disease Outbreak

Table E.2.13-1. Disease Outbreak Events in Essex County, 2007 to 2014

Date(s) of Event	Disease Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
2007 – 2011	Lyme Disease	N/A	N/A	Between 2007 and 2011, there have been 649 confirmed cases of Lyme disease in Essex County.
2007 – 2013	St. Louis Encephalitis	N/A	N/A	Between 2007 and 2013, SLE samples have been submitted for Essex County; however, there have been no positive test results for SLE in the County.
2007	West Nile Virus	N/A	N/A	In 2007, there were four mosquito WNV infections reported in Essex County.
2008	West Nile Virus	N/A	N/A	In 2008, there was one WNV human disease case and 34 mosquito infections reported in Essex County.
2009	Global H1N1 Pandemic	N/A	N/A	The first novel H1N1 patient in the United States was confirmed by laboratory testing at CDC on April 15, 2009. The second patient was confirmed on April 17, 2009. It was quickly determined that the virus was spreading from person to person. On April 22, the CDC activated its Emergency Operations Center to better coordinate the public health response. On April 26, 2009, the U.S. government declared a public health emergency and began actively and aggressively implementing the country's pandemic response plan. By June 19, 2009, all 50 states in the United States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands had reported novel H1N1 infection. While nationwide U.S. influenza surveillance systems indicate that overall influenza activity was decreasing in the country at this time, novel H1N1 outbreaks were ongoing in parts of the United States, in some cases with intense activity. On June 11, 2009, the WHO signaled that a global pandemic of H1N1 was underway by raising the worldwide pandemic alert level to Phase 6. This action was a reflection of the spread of the new H1N1 virus, not the severity of illness caused by the virus. At the time, more than 70 countries had reported cases of novel influenza A (H1N1) infection and there were ongoing community level outbreaks of novel H1N1 in multiple parts of the world. In total there were 18,306 lab-confirmed deaths as a result of H1N1 worldwide. In the United States between April 2009 and August 2009 there were 9,079 cases that required hospitalization and 593 deaths. In New Jersey, cases were widespread in July 2009, with 1,414 confirmed cases and 15 deaths. In Essex County, a man died from complications of the flu strain in June 2009. This was New Jersey's first swine flu-related death. Another Essex County man

Table E.2.13-1. Disease Outbreak Events in Essex County, 2007 to 2014

Date(s) of Event	Disease Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				died in November 2009 due to swine flu.
2009	Lyme Disease	N/A	N/A	There were 209 confirmed cases of Lyme disease in Essex County for 2009.
2009	West Nile Virus	N/A	N/A	In 2009, there were two mosquito WNV infections reported in Essex County.
2010	Lyme Disease	N/A	N/A	There were 134 confirmed cases of Lyme disease in Essex County for 2010.
2010	West Nile Virus	N/A	N/A	In 2010, there were four WNV human disease cases and 25 mosquito infections reported in Essex County.
2011	West Nile Virus	N/A	N/A	In 2011, there were 16 mosquito WNV infections reported in Essex County.
2012	West Nile Virus	N/A	N/A	In 2012, there were four WNV human disease cases and 29 mosquito infections reported in Essex County. One of the human cases led to a fatality.
2013	West Nile Virus	N/A	N/A	In 2013, there was one WNV human disease case and four mosquito infections reported in Essex County.

Source: USGS 2014; New Jersey Department of Health 2012; Lyme Disease Association 2014

EEE Eastern Equine Encephalitis

N/A Not Available

SLE St. Louis Encephalitis

WNV West Nile Virus

E.2.14 Hazardous Substances

The U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) provides an incident report database for information on incidents throughout the U.S. The data is from the hazardous materials incident report. According to this database, between 2007 and 2014, there have been 255 incidents in Essex County (121 air; 127 highway; 5 rail) (PHMSA 2014). Hazardous substances incidents on-site or in-transit occur frequently across the State and in Essex County. These incidents are typically small, localized events. EPA maintains records of the amount of chemicals released at facilities each year. Between 2007 and 2012, Essex County had a total of 472,261 gallons released on-site and a total of 1,317,766 gallons released off-site (U.S. EPA 2014).

For the 2015 HMP, known hazardous substances incidents that have impacted Essex County between 2007 and 2014 are identified in Table E.2.8-1.

Table E.2.14-1. Hazardous Substances Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
February 19, 2010	Fuel Oil Spill	N/A	N/A	A truck crash on Route 24 in Millburn Township caused a fuel spill. A tractor trailer without a trailer was found to have struck a guardrail, heavily damaging the left side of the vehicle. This damaged the fuel tank of the truck which resulted in a fuel spill. Lane closures were required during the cleanup. The Millburn Fire Department, NJDEP, NJDOT, and the Nutley hazmat team responded to the spill.
July 15, 2010	Chemical Explosion	N/A	N/A	A 400-gallon container filled with sulfuric acid exploded inside a Newark bio-diesel fuel processing plant on Passaic Street. The explosion seriously injured a nearby employee who was splashed with the chemical. Sixty firefighters and NJDEP officials responded to the plant. Responders spent nearly 2.5 hours trying to decontaminate the building. Approximately 100 to 200 gallons of the acid spilled and flooded the structure and HAZMAT teams were not able to fully neutralize the acid in the area until the evening. NJSP were forced to shut down water traffic in the Passaic River for approximately an hour.
January 25, 2011	Oil Truck Spill	N/A	N/A	An oil truck tipped over in Belleville Township on Valley Street while trying to get around parked cars on the street.
September 18, 2012	Diesel Spill	N/A	N/A	A large amount of diesel has spilled in a five block area in the City of South Orange. The fuel spill was located on the corner of Montrose and Vose Avenues.
October 11, 2012	Hydraulic Fluid Spill	N/A	N/A	A hydraulic fluid spill occurred at the corner of Grove and Bradford Avenues in Cedar Grove Township. The spill occurred when a truck lost its rear axle just shy of the intersection. The Cedar Grove Fire Department responded, as well as the Nutley Hazmat unit.
May 10, 2013	Diesel Fuel Spill	N/A	N/A	Up to 40 gallons of diesel spill spilled from a utility truck in Millburn Township after it collided with another vehicle. The Nutley hazmat team began cleaning up and the NJDEP took control of the cleanup later on.
September 6, 2013	Oil Spill	N/A	N/A	An overturned tractor trailer on Route 290 East in the Borough of Roseland leaked 7,000 gallons of raw sewage.
January 11, 2014	Diesel Fuel Spill	N/A	N/A	Caldwell Township police and fire departments responded to Caldwell College for reports of a diesel fuel spill. The fuel made its way into the Pinebrook Creek which flows down to Grover Cleveland Park.

Source: North American Hazmat Situations and Deployments Map 2014

E.2.15 Power Outages

Table E.2.15-1. Power Outage Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
March 12 – April 15, 2010	Severe Storms and Flooding	DR-1897	Yes	Between March 12th and 15th, heavy rain fell across parts of New Jersey. A severe windstorm knocked out power to hundreds of thousands of customers primarily in southwestern Connecticut as well as parts of Westchester County and Long Island, in New York State, and New Jersey. The outage lasted as long as six days for some customers in the hardest-hit communities. In Essex County, rainfall totals ranged from 4.06 inches in Caldwell Township to 5.19 inches in Newark. Peak wind gusts ranged from 45 mph in Newark to 55 mph in Caldwell Township. Numerous trees were down in Maplewood and Millburn Townships and in the Village of South Orange. In Cedar Grove Township, 0.25-inch hail covered the ground temporarily. Between March 22nd and 23rd, heavy rain fell in Essex County, with totals ranging from 1.20 inches in Newark to 2.16 inches in West Orange Township. Between March 29th and March 31st, heavy rain fell in Essex County with totals ranging from 3.23 inches in Essex Fells Township to 3.97 inches in Verona Township. Peak wind gust of 43 mph was reported in Newark. As a result of this series of storms, many of the municipalities reported road closures due to flooding. Shelters were opened. In Roseland Borough, there was some residual damage to the footing of the Second Avenue culvert and at the head wall to the Locust Avenue culvert. West Caldwell Township reported damages to their fuel storage tank, wastewater pump station and the roof of the DPW building.
August 27-28, 2011	Hurricane Irene	DR-4021	Yes	Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. The heavy rain from the storm caused record-breaking floods on many streams throughout the State. Thirty-nine of the 94 USGS gages with greater than or equal to 20 years of record, had record high peaks. Thirty-three gages experienced peaks equal to or greater than the 100-year recurrence interval. NWS climate site at Newark recorded 8.92

Table E.2.15-1. Power Outage Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
				inches of rain. According to the New Jersey Board of Public Utilities (NJBPU), Hurricane Irene disrupted service to 1.9 million customers in the State. Residents were without power for as long as eight days after the storm. In Essex County, in West Orange Township, nearly 15 homes were damaged from fallen trees. Emergency crews responded to 120 calls and closed several streets. Rainfall totals ranged from 7.32 inches in Essex Fells to 9.96 inches in Orange; with 7.69 inches falling at Newark Airport which was the highest one-day total for Newark Airport. Peak wind gusts of 40 mph and 61 mph were recorded at Caldwell and Newark Airports, respectively. In Belleville, downed trees were reported on Watchung Avenue. Overall, the municipalities experienced flooding, downed trees, power outages, flooding, evacuations, and over $1.8 million in clean-up and other costs to the municipalities. The Passaic River gage at the Passaic Valley Sewage Commission recorded a peak stage of 7.11 feet, 0.64 feet higher than the previous peak of record on March 13, 2010.
October 29, 2011	Severe Storm	DR-4048	Yes	Rain began to fall in southern New Jersey early on October 29, 2011 and spread north. Some northern areas of the State saw the precipitation begin as snow and during the morning, the rain turned to snow in central and northern New Jersey. Moderate to heavy snow continued into the afternoon, mixing with sleet in lower elevations. Once the snow tapered off during the morning of October 30, 2011, New Jersey had experienced its largest October snowstorm since the late 18th century. Once several inches of snow had accumulated, tree branches and entire trees began to snap and crash onto homes, power lines and cars. By the end of the storm, over 600,000 customers lost power, with some remaining without power for over a week. In Essex County, snowfall totals ranged from 4.9 inches in Belleville Township to 8 inches in West Orange Township. In Verona Township, the wastewater treatment plant flooded and sustained damage to its system. Many municipalities reported road closures, loss of utilities, closed schools and debris removal. Several residents were evacuated from their homes in Roseland Borough. Shelters were open throughout the County as well. Overall, the County had over $1.5 million in clean-up costs and other expenses to the municipalities.
October 26 – November 8,	Superstorm Sandy	DR-4048	Yes	As storm surge from Sandy was pushed into the New York and Raritan Bays, sea water piled up within the

Table E.2.15-1. Power Outage Events in Essex County, 2007 to 2014

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
2012				Hudson River and coastal waterways and wetlands of northeastern New Jersey, including Newark Bay, Passaic and Hackensack Rivers, Kill van Kull, and Arthur Kill. Mandatory evacuations of people living along the coasts and rivers in Union, Essex, and Hudson Counties. Sandy resulted in one of the most significant power failure incidents in New Jersey. In total, the incident caused approximately 2.5 million customers across the State to lose power for an extended period of time, forcing many shelters to remain open several weeks. Power crews from across the country converged in the region to assist with power restoration efforts. Restoration efforts were hampered by the extent of the outages, and the sheer number of customers without power. In Essex County, inundations of four to six feet were measured across Newark Bay in Elizabeth and the area around Newark Airport. Storm tide at Newark was 11.6 feet with an estimated inundation (maximum depth of water on land) of 3.5 feet. The City of Newark had 7.65 inches of rainfall. Peak wind gusts ranged from 70 mph at Caldwell Airport to 78 mph at Newark Airport. In Fairfield, peak wind gusts measured at 72 mph and Reef Road flooded to Howard Street. Overall, the municipalities of Essex County experienced flooding, power outages, evacuations, opening of shelters, and evacuations. The Passaic Valley Sewage Commission reported that the treatment plant in Newark was inundated with at five feet of water during the storm and 840 million gallons of untreated sewage flowed into the Newark Bay. Another three billion gallons of partially treated sewage was sent into the bay before secondary treatment was restored.
October 7, 2013	Strong Storms	N/A	N/A	A line of strong thunderstorms stretched from the New York-Canadian border to North Carolina and moved across New Jersey. This line of storms caused damage to the area and power outages. Approximately 10,000 customers were without power as a result of this storm. JCP&L reported 7,520 customers were without in Somerset and Morris Counties and PSE&G reported approximately 4,500 customers without in Bergen and Essex Counties.
January 13, 2014	Power Outage	N/A	N/A	A power outage left sections of the City of Newark and the Townships of Irvington and Maplewood in the dark. The power went out around 10pm on January 13th due to a problem at an electrical substation in Irvington Township. More than 15,000 customers were affected. Power was restored by 5am on January 14th.

E.2.16 Terrorism

For the 2015 HMP, known terrorist events that may have impacted Essex County between 2007 and 2014 are identifiable in Table E.2.16-1. No terrorist events were identified to have occurred within in the County during this timeframe; however, with the County's proximity to New York City, the County has the potential to be impacted by these events. Therefore, Table E.2.16-1 includes events that have occurred outside of Essex County.

Table E.2.16-1. Terrorism Events in New Jersey and Surrounding Area

Date(s) of Event	Event Type	FEMA Declaration Number (if applicable)	Essex County Designated?	Description
October 26, 2007	Bombing	N/A	N/A	A pair of improvised explosive devices was thrown at the Mexican Consulate in New York City. The fake grenades were filled with black powder and detonated by fuses, causing very minor damage.
March 6, 2008	Bombing	N/A	N/A	A homemade bomb damaged a recruiting station in Times Square, New York.
May 25, 2009	Bombing	N/A	N/A	A 17-year-old set off a crude explosive on the Upper East Side of Manhattan, which shattered windows and destroyed a bench.
May 1, 2010	Bombing	N/A	N/A	In Times Square, New York City, an individual attempted to detonate a bomb in a vehicle. The device did not detonate.

Source: NJ State HMP 2014
N/A Not Applicable; Not Available

E.2.17 Transportation Failure

The 2007 HMP did not discuss specific transportation failure events that occurred in Essex County. For the 2015 HMP update, transportation events were summarized from 2007 to 2014.

Table E.2.17-1 . Transportation Failure Incidents in Essex County, 2007 to 2014

Date	Type	Description
2007 to 2014	Vehicular Accidents	Between 2007 and 2014, as reported by NJDOT, there were over 175,000 vehicular accidents in Essex County.
June 26, 2007	Highway/Railroad Collision	A highway user stopped at the crossing at the Benton Harbor Station in Newark, proceeded, and was struck by a train. No injuries or fatalities reported.
August 14, 2007	Highway/Railroad Collision	A driver of a van struck a train at the crossing of Frelinghuysen Avenue in Newark (Hunter Station). The driver fled the scene. No injuries or fatalities reported.
October 16, 2007	Highway/Railroad Collision	A truck driver was traveling south on Corbin Street and was in the process of making a right hand turn into the Newark Station when an intermodal train hit the chassis of the truck. One injury was reported from this accident.
May 16, 2008	Aviation Accident	At the Essex County Airport in Caldwell, a pilot stated that after landing on a wet runway, the airplane veered to the right and struck a sign. This caused substantial damage to the right wing of the plane. No injuries or fatalities reported.
April 2, 2009	Aviation Accident	A pilot experienced a loss of brake pressure and directional control at Newark Airport. He struck a fence post that resulted in substantial damage to the left wing. No injuries or fatalities reported.
May 31, 2009	Aviation Accident	During a landing in Caldwell, an aircraft drifted to the left side of the runway prior to touchdown which damaged the plane. No injuries or fatalities reported.
December 28, 2009	Highway/Railroad Collision	A truck made a left turn onto Winans Avenue in Irvington and failed to yield for crossing lights following another truck into the crossing. The truck was driving on the wrong side of the road. No injuries or fatalities reported.
April 5, 2010	Aviation Accident	A plane experienced a left engine fan cowl separation during takeoff at Newark Airport. No injuries or fatalities reported.
July 5, 2010	Aviation Accident	At the Essex County Airport, a plane crashed during a landing. The plane was destroyed by impact forces and a post-crash fire. The accident resulted in three fatalities.
January 5, 2011	Highway/Railroad Collision	A trespasser was struck and killed by a westbound train at the Jerome Place crossing in Montclair. The trespasser jumped in front of the train.
January 7, 2011	Highway/Railroad Collision	A highway user struck a tank car at the crossing on Ferry Street in Newark and fled the scene. One injury was reported from this accident.
February 26, 2011	Highway/Railroad Collision	FO52 crew struck a highway user on Tyler Street in Newark that was stopped on the crossing. No injuries or fatalities reported.
March 29, 2011	Highway/Railroad Collision	A train struck a highway user on Tyler Street in Newark that did not stop at the crossing. No injuries or fatalities reported.
September 21, 2011	Highway/Railroad Collision	A vehicle did not stop at the railroad crossing and struck by a train in Newark at Tyler Street and Coastwise. The driver fled the scene. No injuries or fatalities reported.
November 3, 2011	Highway/Railroad Collision	A vehicle failed to stop at the Tyler Street crossing in Newark and was struck by a train. No injuries or fatalities reported.
November 10, 2011	Highway/Railroad Collision	A driver of a tractor trailer tried to beat a train across the tracks at the west end of Garden in Newark and was struck by the train. No injuries or fatalities reported.
February 18,	Aviation Accident	A pilot lost directional control during a crosswind landing, which caused the plant to

Table E.2.17-1 . Transportation Failure Incidents in Essex County, 2007 to 2014

Date	Type	Description
2012		depart to the left of the runway and striking a taxiway sign in Caldwell. No injuries or fatalities reported.
February 22, 2012	Highway/Railroad Collision	A truck struck a train while trying to beat the train at the Export/Tyler Street crossing in Newark. No injuries or fatalities reported.
July 20, 2012	Highway/Railroad Collision	A train struck a tractor trailer at the Wilson Avenue crossing in Newark. No injuries or fatalities reported.
December 28, 2012	Highway/Railroad Collision	A vehicle failed to stop at the Garden Crossing in Newark and was struck by a train. No injuries or fatalities reported.
2013	Railroad Accident	In 2013, there were 130 accidents/incidents in Essex County. Five of those were train accidents; six were highway-rail crossing incidents; and 119 were other incidents.
March 27, 2013	Highway/Railroad Collision	A train struck a vehicle at the Tyler Street crossing in Port Newark. No injuries or fatalities reported.
May 1, 2013	Aviation Accident	Two aircrafts taxiing at Newark Airport struck one another, causing minor damage to the one plane and substantial damage to the other. No injuries or fatalities were reported.
May 13, 2013	Highway/Railroad Collision	A train struck a vehicle at the Doremus Avenue crossing in Newark. No injuries or fatalities reported.
May 18, 2013	Aviation Accident	During landing at Newark Airport, the left main landing gear failed to lower and locked. This caused the airplane to have substantial damage; however, no injuries or fatalities were reported.
June 24, 2013	Highway/Railroad Collision	A truck cut in front of the FO04 at it was crossing a private crossing at the Port Newark Terminal. No injuries or fatalities reported.
July 9, 2013	Highway/Railroad Collision	An unidentified trailer that failed to stop at the Conrail crossing in Newark was struck by a train. No injuries or fatalities reported.
August 20, 2013	Highway/Railroad Collision	A train struck a vehicle at the Tyler Street crossing in Newark. No injuries or fatalities reported.
November 14, 2013	Highway/Railroad Collision	A train struck a truck that failed to stop at the Tyler Street crossing in Newark. No injuries or fatalities reported.
January 22, 2014	Highway/Railroad Collision	At the Newark Station, a train struck a truck that was stopped on the tracks. The driver was not in the truck at time of the accident. No injuries or fatalities reported.
January 25, 2014	Highway/Railroad Collision	At Port Newark, FO15 was shoving east on the south side lead when a customer's truck failed to yield on private grade. No injuries or fatalities reported.
February 17, 2014	Aviation Accident	During landing in Caldwell, a plane's nose gear struck a snowbank off of the runway. This caused substantial damage to the plane. The pilot had minor injuries.
February 27, 2014	Highway/Railroad Collision	At Port Newark, a train struck a truck that tried to get by the train at the crossing. No injuries or fatalities reported.

Source: Federal Railroad Administration 2014, NTSB 2014; NJDOT 2014; Federal Railroad Administration 2014

APPENDIX F. MITIGATION STRATEGY SUPPLEMENT

This appendix summarizes additional activities and resources provided to plan participants to support the update of the mitigation strategy.

F.1 2015 Mission Statement, Goals and Objectives Review

County and municipal planning documents and recent policies changes were reviewed and discussed with the Planning Partnership to help inform the review and update of the mission statement, goals and objectives. Table F-1 summarizes the Steering Committee review and evaluation of the 2015 mitigation statement, goals and objectives.

Table F-1. Steering Committee Review of the 2015 Mission Statement, Goals and Objectives

2015 Mission Statement	Mission Statement Evaluation (Keep as is? Change?)
Through strategic planning, partnerships and collaboration, identify and reduce the vulnerability to natural and human caused hazards in order to protect the health, safety, quality of life, environment, and economy of all people and all communities within Essex County.	*Update:* Through strategic planning, partnerships and collaboration, identify and reduce the vulnerability *and increase the resiliency to the current and future effects of* natural and human caused hazards in order to protect the health, safety, quality of life, environment, and economy of all people and all communities within Essex County.

2015 Goal	Goal Evaluation (Keep? Change?)	2015 Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
Goal 1: Protect life	*Keep*	1.1: Improve warning and emergency communications systems	*Keep*
		1.2: Reduce the impacts of hazards on people, property, and vulnerable populations.	*Keep*
		1.3: Strengthen County and local planning, building codes, ordinances and enforcement	*Update:* *Integrate the hazard mitigation plan into existing county and local planning, building, codes, ordinances, and enforcement.*
Goal 2: Protect property	*Keep*	2.1: Protect critical facilities	*Update:* Protect *and increase resilience of* critical facilities *and lifelines to reduce disruption of essential activities during and after a hazard event.*
		2.2: Reduce repetitive and severe repetitive losses	*Keep*
		2.3: Protect environmental resources that serve a natural hazard mitigation function	*Keep*
		2.4: Encourage cost-effective and environmentally-sound development and land use	*Update:* Encourage cost-effective and environmentally-sound development

2015 Goal	Goal Evaluation (Keep? Change?)	2015 Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
			and land use *by incorporating green infrastructure*
<u>Goal 3:</u> Increase public preparedness and awareness	*Keep*	3.1: Improve public awareness of hazards and the risks they pose	*Update: 3.1 Enhance and implement public education and outreach programs to increase awareness of hazard risks*
		3.2: Improve hazard information databases and maps and increase accessibility to those resources	*Keep*
		3.3: Enhance stakeholder education and training	*Update: 3.3 Provide stakeholder training on mitigation and resilience-related topics to support the identification and implementation of projects and access to funding*
			NEW: 3.4 Improve education of public officials, stakeholders, and the general public regarding the impacts of future conditions, sea level rise, and climate change on people, property, transportation assets, and the economy.
Goal 4: Develop and maintain an understanding of risks from hazards	*Update: Increase the understanding and awareness of risks from hazards*	4.1: Review and incorporate updated hazard data into the County Hazard Mitigation Plan and other county and local planning mechanisms	*Keep*
		4.2: Increase support for the development of local mitigation planning and projects	*Keep*
		4.3: Incorporate new State and FEMA guidance, rules and regulations into the Plan	*Keep*
			NEW: 4.4 Strengthen understanding of, and adaptation to, a changing climate
<u>Goal 5:</u> Enhance County and local mitigation capabilities to reduce hazard vulnerabilities	*Keep*	5.1: Monitor the progress of on-going mitigation activities within the county	*Update: 5.1 Implement and monitor* the progress of on-going mitigation activities within the county
		5.2: Encourage and support additional related training and education of public officials	*Keep*
		5.3: Encourage the formation of partnerships to leverage and share mitigation resources	*Keep*
		5.4: Integrate the County Hazard Mitigation Plan with other County, regional and local planning initiatives	*Keep*
<u>Goal 6</u>: Support continuity of operations pre-, during and post-hazard events	*Keep*	6.1: Ensure continuity of operations of essential county government services	*Update:* 6.1: Ensure continuity of operations of essential county government services *through training, planning and implementation of mitigation strategies*
		6.2: Increase resiliency by facilitating rapid disaster recovery	*Update:* 6.2: Increase resiliency by facilitating rapid disaster recovery *ensuring that post-disaster efforts incorporate*

2015 Goal	Goal Evaluation (Keep? Change?)	2015 Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
			mitigation and adaptation strategies to minimize future losses.
		6.3: Support and encourage the implementation of alternative energy sources	*Update:* 6.3: Support and encourage the implementation of alternative *and sustainable* energy sources

F.2 Mitigation Strategy Workshop Resources

In October 2019 a Mitigation Strategy Workshop was held for all plan participants. The workshop consisted of an overview of the mitigation strategy update followed by a break-out of small groups. The small groups discussed common problem statements and vulnerabilities and assisted each other by identifying mitigation alternatives. Resources available at the workshop included the following to assist with the identification of mitigation alternatives and the development of the mitigation strategy workshops found in Section 9 (Jurisdictional Annexes).

1. FEMA Local Mitigation Handbook
2. Strengths, Weaknesses, Obstacles and Opportunities exercise results
3. Citizen survey results
4. FEMA Mitigation action types (Table F-2)
5. FEMA Mitigation Ideas
6. Mitigation Catalog for Essex County (Table F-3)
7. FEMA Project Useful Life factsheet
8. Mitigation funding sources at the federal, state and local levels (Table F-4)

F.2.1 Types of Mitigation Actions

A mitigation action is a specific action, project, activity, or process taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process.

The primary types of mitigation actions to reduce long-term vulnerability are:

- Local Plans and Regulations (LPR)
- Structure and Infrastructure Projects (SIP)
- Natural Systems Protection (NSP)
- Education and Awareness Programs (EAP)

Table F-2. FEMA Mitigation Action Types

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	Comprehensive plans Land use ordinances Subdivision regulations Development review Building codes and enforcement NFIP Community Rating System Capital improvement programs Open space preservation Stormwater management regulations and master plans
Structure and Infrastructure Projects	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. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	Acquisitions and elevations of structures in flood prone areas Utility undergrounding Structural retrofits Floodwalls and retaining walls Detention and retention structures Culverts Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	Sediment and erosion control Stream corridor restoration Forest management Conservation easements Wetland restoration and preservation
Education and Awareness Programs	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 or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	Radio or television spots Websites with maps and information Real estate disclosure Presentations to school groups or neighborhood organizations Mailings to residents in hazard-prone areas StormReady Firewise Communities

F.2.2 Mitigation Catalog

Table F-3 presents mitigation alternatives organized by hazard of concern at the personal, corporate and government scale.

Table F-3. Mitigation Catalog

Coastal Erosion and Sea Level Rise		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: None *Reduce vulnerability to the hazard:* Retrofit/elevate structures Purchase flood insurance *Increase Capability* Improve awareness of hazard and insurance options	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* Relocate critical infrastructure, such as power lines, underground Retrofit structures, elevate mechanicals *Increase Capability:* Improve awareness of hazard and insurance options	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* Support sustainable and resilient land use and community development Recognize sea level rise and erosion areas as a hazard overlay for planning Limit new development and critical infrastructure inside the sea level rise area Develop design standards for development inside sea level rise hazard area Incentivize improved flood risk management *Increase Capability:* Develop guidance and checklist for developers to assist with integration and incorporation of green and sustainable approaches Encourage property owners to purchase flood insurance

Coastal Storm/Severe Storm		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: None *Reduce vulnerability to the hazard:* Retrofit structures (improved roofing, glazing, insulation, etc.) Provide for redundant heat and power Contact municipality or utilities to trim or remove trees that could affect power lines Plant appropriate trees near home and power lines ("Right tree, right place" National Arbor Day Foundation Program. *Increase Capability* Improve awareness of impending severe weather (e.g. obtain a NOAA weather radio) Promote 72-hour self-sufficiency Provide for redundant heat and power Participate in NOOA's SKYWARN training to increase knowledge and awareness of hazard	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* Relocate critical infrastructure, such as power lines, underground Reinforce or relocate critical infrastructure such as powerlines so that it meets performance expectations. *Increase Capability:* Contact municipality or utilities to trim or remove trees that could affect power lines Create redundancy (e.g. backup generators) Improve awareness of impending severe weather (e.g. obtain a NOAA weather radio) Develop a Continuity of Operations Plan (COOP) Monitor impending storm events so that you can release employees in such a manner as to not negatively impact emergency response personnel/services.	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* Harden infrastructure such as locating utilities underground. Trimming trees back from power lines Designate snow routes and strengthen critical road sections and bridges. Adopt ordinances that regulate the type and quantity of trees planted near utility lines Relocate critical infrastructure, such as power lines, underground *Increase Capability:* Support programs that proactively manage problem areas by use of selective removal of hazardous trees, tree replacement, etc. Enforce building codes that require all roofs to withstand snow loads. Increase communication alternatives Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors. Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines Promote awareness and participation in alert systems Provide NOAA weather radios to the public Create/Enhance "mutual aid" agreements for response to all emergencies Create/identify evacuation routes to be utilized during severe storm events. Develop debris management plans. Join "Storm-Ready" program Provide early warning of impending severe storm events to identified critical or essential facilities. This would include facilities such as large employments centers, schools, hospitals Promote emergency power supplies to private property. Improve, expand or harden communications facilities and services

Coastal Storm/Severe Storm		
		Recruit additional emergency personnel or use mutual aid agreements Increase sheltering capabilities Increase capability to respond to power outages and downed power lines. Establish partnerships with utility providers through pro-active planning.

Drought		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: Consider stored water/captured water techniques during dry seasons. *Reduce vulnerability to the hazard:* Drought resistant landscapes Reduce water system losses Regularly check for leaks to minimize water supply losses Install low-flow water saving showerheads and toilets Turn water flow off while brushing teeth or during other cleaning activities Adjust sprinklers to water the lawn and not the sidewalk or street. Run the dishwasher and washing machine only when they are full. Check for leaks in plumping or dripping faucets. Install rain-capturing devices for irrigation. Install graywater systems in homes to encourage water reuse. *Increase Capability* Practice active water conservation techniques. Seek ways to operate wells in such a way to enhance their functional longevity and supply capability.	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* Consider stored water/captured water techniques during dry seasons. *Reduce vulnerability to the hazard:* Drought resistant landscapes Reduce private water system losses Identify alternate water supply sources. Install low-flow water saving showerheads and toilets Adjust sprinklers to water the lawn and not the sidewalk or street. *Increase Capability:* Practice active water conservation Develop a COOP Create a water conservation plan.	*Manipulate the Hazard:* Groundwater recharge through stormwater management *Reduce exposure to the hazard:* Identify and create groundwater back up sources. Create /identify new impounded water supply points. Developing new or upgrading existing water delivery systems to eliminate breaks and leaks. *Reduce vulnerability to the hazard:* Water use conflict regulations Reduce water system losses Distribute water saving kits Identify sites ideally suited for ground water recharge. Implement stormwater retention in regions ideally suited for groundwater recharges. Utilize drought resistant landscapes on community owned facilities. Encourage citizens to take water-saving measures *Increase Capability:* Public education on drought resistance Identify alternative water supplies for time of drought. Mutual aid agreements with alternative suppliers. Develop a drought contingency plan Develop criteria-"triggers" for drought related actions Improve accuracy of water supply forecasts Provide incentives to influence active water conservation techniques such as water user rate reductions. Establish protocol for saltwater de-salinization to be implemented during conditions of severe drought. Consider providing incentives to property owners that utilize drought resistant landscapes in the design of their homes. Use of water buffalo tankers

Drought		
		Promote well usage techniques that strive to enhance functional longevity and supply capability of private water supply wells. Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.

Earthquake		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: Locate outside of hazard area (off soft soils) *Reduce vulnerability to the hazard:* Retrofit structure (anchor house structure to foundation) Secure household items that can cause injury or damage such as water heaters, bookcases, and other appliances Build to higher design standards *Increase Capability* Practice "drop, cover and hold" Develop household mitigation plan, such as creating a retrofit savings account, communication capability with outside, 72 hr. self-sufficiency during an event Increase capability by having cash reserves for reconstruction Become informed on the hazard and risk reduction alternatives available. Develop a post-disaster action plan for your household.	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* Locate/relocate mission critical functions outside hazard area where possible. *Reduce vulnerability to the hazard:* Build redundancy for critical functions/facilities Retrofit critical buildings/areas housing mission critical functions. *Increase Capability:* Adopt higher standard for new construction -- Consider "performance-based design' when building new structures Increase capability by having cash reserves for reconstruction Inform your employees on the possible impacts of earthquake and how to deal with them at your work facility. Develop a Continuity of Operations Plan (COOP)	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* Locate critical facilities or functions outside of hazard area where possible. *Reduce vulnerability to the hazard:* Harden infrastructure Provide redundancy for critical functions Adopt higher regulatory standards for structures Conduct "rapid screening" programs for critical facilities to identify facilities that may be particularly prone to EQ damage, then develop investigation/action plans to address such structures *Increase Capability:* Provide better hazard maps Provide technical information and guidance Enact tools to help manage development in hazard areas: tax incentives, information Include retrofitting/replacement of critical system elements in CIP Develop strategy to take advantage of post disaster opportunities Warehouse critical infrastructure components such as pipe, power line, and road repair material. Develop and adopt a Continuity of Operations / Continuity of Government Plan (COOP/COG) Initiate triggers guiding improvements such as: (< 50% substantial damage/improvements) Further enhance seismic risk assessment to target high hazard buildings for mitigation opportunities. Develop a post disaster action plan that includes a grant funding and debris removal components. Utilize warning systems

Earthquake		
		Educate builders and developers on seismic construction standards

Extreme Temperature		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: Insulate structure Provide redundant power. Plant appropriate trees near home ("Right tree, right place" National Arbor Day Foundation Program). *Reduce vulnerability to the hazard:* Air condition non-conditioned buildings. Install backup heat (e.g. wood burning stoves) Incorporate "green building" methods (e.g. green roofs) *Increase Capability* Be aware of impending heat waves. Inform yourself on the do's and don'ts during heat waves. Have fans available for use during peak demands in leu of air conditioning. Install back-up generators Know the location of cooling and warming shelters	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* Create redundancy to power supply to deal with power grid vulnerability during high demands *Reduce vulnerability to the hazard:* Air condition non-conditioned buildings. Incorporate "green building" methods (e.g. green roofs) *Increase Capability:* Inform employees of the seriousness of heat waves. Monitor weather forecasts. Establish a COOP.	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* Create redundancy to power supply to deal with power grid vulnerability during high demands *Reduce vulnerability to the hazard:* Air condition public buildings. Incorporate "green building" methods (e.g. green roofs) *Increase Capability:* Inform the public on the seriousness of heat-waves Identify populations vulnerable to extreme heat (elderly, poor) for early warning during potential heat waves. Enhance weather forecasting capability Distribute fans to vulnerable populations. Promote selective approaches to cooling your residences and businesses during peak demands.

Flood		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: Clear stormwater drains and culverts *Reduce exposure to the hazard*: Locate or re-locate outside of hazard area Institute low impact development techniques on property *Reduce vulnerability to the hazard:* Retrofit existing structures and utilities above Base Flood Elevation (BFE) Floodproof existing structures (wet- or dry floodproofing). Store hazardous materials above BFE or outside of flood prone areas *Increase Capability*	*Manipulate the Hazard:* Clear stormwater drains and culverts *Reduce exposure to the hazard:* Locate business critical facilities or functions outside hazard area Institute low impact development techniques on property *Reduce vulnerability to the hazard:* Build redundancy for critical functions/ retrofit critical buildings. Provide flood-proofing measures when new critical infrastructure must be located in floodplains. Harden structures and infrastructure (wet and dry-floodproofing)	*Manipulate the Hazard:* Clear stormwater drains and culverts Dredging, levee construction, providing retention areas Structural flood control: levee's, dams, channelization, revetments. Construct regional stormwater control facilities Lead and develop a county-wide stream clearing strategy including the development of thresholds for response/action. *Reduce exposure to the hazard:* Locate/re-locate critical facilities outside of hazard area Acquire or relocate identified repetitive loss properties.

Flood		
Develop household mitigation plan, such as retrofit savings, communication capability with outside, 72-hr. self-sufficiency during and after an event Buy flood insurance	Store hazardous materials above BFE or outside of flood prone areas *Increase Capability:* Increase capability by having cash reserves for reconstruction Develop and adopt a Continuity of Operations Plan (COOP) Solicit 'cost-sharing" through partnerships with private sector stakeholders on projects with multiple benefits. Dam owner/operators should continue to be aware of and understand dam inspection and reporting requirements. Ensure that all dam EAP's are kept in compliance with State regulations	Promote open space uses in identified high hazard areas via techniques such as: PUD's, easements, setbacks, greenways, sensitive area tracks. Adopt land development criteria such as PUD's, Density transfers, clustering Institute low impact development techniques on property Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff Pass an ordinance to incorporate additional zoning classifications into flood zones within each municipality. Increase floodplain standards within municipal. Continue development application reviews by County Planning Board to reduce risky development practices. *Reduce vulnerability to the hazard:* Harden structures and infrastructure (wet and dry-floodproofing) Provide redundancy for critical functions and infrastructure Adopt appropriate regulatory standards such as cumulative substantial improvement/damage, freeboard, lower substantial damage threshold, compensatory storage. Stormwater management regulations and master planning. Adopt "no-adverse impact" floodplain management policies that strive to not increase the flood risk on down-stream communities. Participate in the Community Rating System (CRS) Implement as-built regulatory requirements Implement site review ordinances/requirements Establish stream maintenance programs with stakeholders Incorporate retrofitting/replacement of critical facilities and infrastructure in Capital Improvement Plans (CIPs) Promote the use of vegetation/plants as green erosion control measures to reduce localized flooding. *Increase Capability:* Produce better hazard maps, and improve access to flood hazard mapping Capture/survey "high-water" marks during flood events.

Flood		
		Provide technical information and guidance on appropriate mitigation options available to businesses and homeowners Enact tools to help manage development in hazard areas (stronger controls, tax incentives, information) Establish an additional layer of zoning within flood hazard areas Develop strategy to take advantage of post disaster opportunities Improve compliance with and enforcement of the NFIP Develop mitigation partnerships with regional stakeholders Join Community Rating System (CRS) program, or improve level of participation in CRS Develop and implement a public information strategy for flood hazard awareness, flood insurance (NFIP) and mitigation Maintain existing data as well as gather new data needed to define risks and vulnerability. Create a building and elevation inventory of structures in the floodplain Identify flood prone areas that may be in need of new flood studies Establish a program to identify and educate owners of flood-prone properties of potential mitigation options (e.g. elevations, relocations) Charge a hazard mitigation fee on all new permits to create a hazard mitigation funding source for initiatives or grant cost share requirements. Integrate floodplain management policies into other planning mechanisms within the planning area. Establish a Stormwater Utility to deal with urban drainage/flooding issues Establish incentives to promote flood hazard mitigation of private property (e.g. permit fee waivers). Adopt ordinances/standards for cumulative damages and/or improvements Upgrade NFIP Floodplain ordinance, as well as other ordinances to current or above current standards. Develop and adopt a COOP Join "Storm Ready" Program Participate in county and regional training programs Provide additional training/certification to NFIP floodplain administrators and code officials.

Flood		
		Implement annual training to account for high turnover of municipal officials. Maintain and enhance flood forecasting ability, including the establishment and maintenance of critical stream gages Promote awareness and participation in alert systems Support and participate in regional flood management efforts, such as the Flood Mitigation Task Force or similar efforts Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones. Provide continued and enhanced training for emergency responders Establish a revolving "bank" or budget line item to fund grant application support Continue to review updated Flood Insurance Rate Maps to ensure accuracy as well as maintaining lines of communication with homeowners to make them aware of potential changes related to their property status. Provide trainings for FPA's on the NFIP/Floodplain Best Practices and also pursue CFM accreditation for municipal FPA's. Build and maintain relationships to develop regional watershed/floodplain mitigation solutions. Pursue grant funding opportunities to fund repairs of catchments and infrastructure on a proactive basis. Explore grant funding opportunities related to climate change to fund mitigation projects.

Geologic Hazard		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: None *Reduce vulnerability to the hazard:* None *Increase Capability* None	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* None *Increase Capability:* None	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* Consider hazard areas in land-use planning, zoning and development siting Acquire structures in highest hazard areas (demolish and convert to restricted open space) Relocation of Structures Open Space Preservation *Reduce vulnerability to the hazard:*

Geologic Hazard		
		Consider hazard areas in land-use planning and development siting Stabilize vulnerable slopes near structures and infrastructure. Work with stakeholders to develop appropriate risk reduction strategies. *Increase Capability:* Increase understanding of hazard areas (e.g. Landslide Susceptibility Maps) -geotechnical surveys, LIDAR and mapping Work with stakeholders such as USGS, NJDEP to develop appropriate risk reduction strategies. Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones Develop county-level programs to document slide events (landslide inventory), and maintain its currency

Severe Winter Storm		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard: None *Reduce exposure to the hazard*: Plant appropriate trees near home and power lines ("Right tree, right place" National Arbor Day Foundation) *Reduce vulnerability to the hazard:* Insulate House to provide greater thermal efficiency and reduce heat loss. Provide redundant heat and power Insulate Structure Ensure natural gas input/release valves do not get covered in snow *Increase Capability* Trim or remove trees that could affect power lines Prepare emergency food and supplies to be self-sufficient for at least 72 hours in the event of a severe winter storm. Be aware of inclement weather conditions and move your vehicles off of the street as severe weather systems approach. Retrofit structures	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* Relocate critical infrastructure, such as power lines, underground Reinforce or relocate critical infrastructure such as powerlines so that it meets performance expectations. Install tree wire *Increase Capability:* Trim or remove trees that could affect power lines Create redundancy in utilities and communications Develop a Continuity of Operations Plan (COOP) to address operations before, during and after coastal storm events. Utilize weather radios at the workplace to keep your employees aware of severe weather conditions.	*Manipulate the Hazard:* None *Reduce exposure to the hazard:* None *Reduce vulnerability to the hazard:* Harden infrastructure such as locating utilities underground where appropriate. Trimming trees back from power lines Designate snow routes and strengthen critical road sections and bridges. Adopt codes and regulations that address the issues of parking of vehicles along roadways during severe weather events. Develop or enhance the capacity/capability of stormwater conveyance systems. Provide backup power sources at vital critical facilities. *Increase Capability:* Support programs such as "Tree Watch" that proactively manage problem areas by use of selective removal of hazardous trees, tree replacement, etc. Establish and enforce building codes that require all roofs to withstand snow loads--

Severe Winter Storm		
		Develop/Improve/Enforce building Codes in Hazard Areas Increase communication alternatives Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors. Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines Provide weather radios to vulnerable populations Enhance public awareness campaigns to address those issues of alert and warning and actions to take during severe weather events. Utilize the best available technology to enhance the warning systems for all severe weather events (i.e.: tornado warning systems). Coordinate severe weather warning capabilities and the dissemination of warning amongst those agencies within the planning are with the highest degree of capability. Encourage local ordinances for planting tree near lines and join Tree City USA. Increase tree management programs. Join the Community Rating System Join "Storm-Ready" Retrofit critical structures and promote hazard resistant construction Keep open communications and education of hazards for mobile home communities Retrofit above-ground utilities to underground facilities if appropriate Create a salt reserve or research alternates to stretch salt reserve. Ensure accessibility to hospital. Provide better debris logistics and removal. Provide better communication systems and back-up communication systems to inform public of hazards and to communicate during the hazard event.

Wildfire		
Personal Scale	**Corporate Scale**	**Government Scale**
Manipulate the Hazard:	*Manipulate the Hazard:* None	*Manipulate the Hazard:* None

Wildfire		
Clear potential fuels on property; dry, overgrown underbrush; diseased trees *Reduce exposure to the hazard*: Clean and maintain defensible space around structures Locate outside hazard area Mow regularly *Reduce vulnerability to the hazard:* Create and maintain defensible space around structures, provide water on site. Use fire-retardant building materials Create defensible spaces around your home. *Increase Capability* Employ Firewise techniques to safeguard your home Identify alternative water supply points proximate to your home such as swimming pools, lakes, streams Support your local fire department Be aware of weather conditions that support/enhance the probability of wildfires	*Reduce exposure to the hazard:* *Reduce vulnerability to the hazard:* Create and maintain defensible space around structure and infrastructure and provide water onsite Use fire-retardant building materials Provide stored water to be utilized for firefighting with appropriate fire department connections at facilities not equipped with fire hydrants or inadequate fire hydrant spacing *Increase Capability:* Support Firewise community initiatives	*Reduce exposure to the hazard:* Clear fuels (dry underbrush, diseased trees) on land that can trigger and maintain wildfires Implement Best Management Practices on public lands *Reduce vulnerability to the hazard:* Create and maintain defensible space around structure and infrastructure Higher regulatory standards Establish water main supply and hydrants in unhydranted areas Decrease hydrant spacing Purchase *Increase Capability:* More public outreach and education efforts including an active “Firewise” program Identify fire response and alternative evacuation routes Seek alternative water supplies in urban wildland interface areas. Become a "Firewise" community Increase capability to fight wildfires utilizing equipment that can support wildfire fighting such as: tankers, engines with "pump-and-run" capabilities, dump tanks for tanker shuttle operations. Develop/implement wildfire management plans. Establish Mutual Aid Agreements with the Tender Task Force Attend the Tender Apparatus Response Plan (TARP) training conducted by Kean University Develop a Water Supply Plan

F.2.3 Potential Mitigation Funding Sources

While it is important to recognize the mitigation strategies for each jurisdiction to help achieve the mitigation goals and objectives of the Hazard Mitigation Plan (HMP), it is also important to provide sources for funding to implement these strategies. The table below provides a list of programs, descriptions, and links for those seeking funding sources. Please note that this table is not intended to be a comprehensive list, but rather a starting point to help identify potential sources of funding for the identified mitigation strategies.

Table F-4. Mitigation Funding Sources

Program	Description	Lead Agency	Website
Federal			
Hazard Mitigation Assistance (HMA)	Grants to provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages – includes FMA, HMGP, PDM	FEMA	https://www.fema.gov/hazard-mitigation-assistance
Flood Mitigation Assistance (FMA)	Program Grants to States and communities for pre-disaster mitigation planning and projects to help reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program	FEMA	https://www.fema.gov/flood-mitigation-assistance-grant-program
Hazard Mitigation Grant Program (HMGP)	Grants to States and communities for planning and projects providing long-term hazard mitigation measures following a major disaster declaration	FEMA	https://www.fema.gov/hazard-mitigation-grant-program
Pre-Disaster Mitigation (PDM) Competitive Grant Program	Grants to States and communities for planning and projects that provide long-term hazard pre-disaster mitigation measures	FEMA	https://www.fema.gov/pre-disaster-mitigation-grant-program
Public Assistance: Hazard Mitigation Funding Under Section 406	Hazard mitigation discretionary funding available under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act following a Presidentially declared disaster	FEMA	https://www.fema.gov/news-release/2017/05/03/4309/fema-hazard-mitigation-grants-404-and-406
Assistance to Firefighters Grant Program	The primary goal of the Assistance to Firefighters Grants (AFG) is to enhance the safety of the public and firefighters with respect to fire-related hazards by providing direct financial assistance to eligible fire	FEMA	https://www.fema.gov/welcome-assistance-firefighters-grant-program

Program	Description	Lead Agency	Website
	departments, nonaffiliated Emergency Medical Services organizations, and State Fire Training Academies. This funding is for critically needed resources to equip and train emergency personnel to recognized standards, enhance operations efficiencies, foster interoperability, and support community resilience.		
High Hazard Potential Dams (HHPD) Rehabilitation Grant	The Rehabilitation of High Hazard Potential Dams Grant Program (HHPD provides technical, planning, design, and construction assistance in the form of grants to non-Federal governmental organizations or nonprofit organizations for rehabilitation of eligible high hazard potential dams.	FEMA	https://www.grants.gov/web/grants/view-opportunity.html?oppId=316238
Fire Management Assistance Grant Program	Assistance for the mitigation, management, and control of fires on publicly or privately-owned forests or grasslands that threaten such destruction as would constitute a major disaster. Provides a 75% Federal cost share and the State pay the remaining 25% for actual cost.	FEMA	https://www.fema.gov/fire-management-assistance-grant-program
Disaster Housing Program	Emergency assistance for housing, including minor repair of home to establish livable conditions, mortgage and rental assistance	HUD	https://www.hud.gov/program_offices/public_indian_housing/publications/dhap
HOME Investment Partnerships Program	Grants to local and state government and consortia for permanent and transitional housing, (including financial support for property acquisition and rehabilitation for low income persons)	HUD	https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/
HUD Disaster Recovery Assistance	Grants to fund gaps in available recovery assistance after disasters (including mitigation)	HUD	https://www.hud.gov/info/disasterresources
Section 108 Loan Guarantee	Enables states and local governments participating in the Community Development Block Grant (CDBG) program to obtain federally guaranteed loans for disaster-distressed areas	HUD	https://www.hudexchange.info/programs/section-108/
Smart Growth Implementation Assistance	The SGIA program focuses on complex or cutting-edge issues, such as stormwater management, code revision, transit-oriented development, affordable housing, infill	EPA	https://www.epa.gov/smartgrowth

Program	Description	Lead Agency	Website
(SGIA) program	development, corridor planning, green building, and climate change. Applicants can submit proposals under 4 categories: community resilience to disasters, job creation, the role of manufactured homes in sustainable neighborhood design or medical and social service facilities siting.		
Partners for Fish and Wildlife	Financial and technical assistance to private landowners interested in pursuing restoration projects affecting wetlands and riparian habitats	U.S. Fish and Wildlife Service	https://www.fws.gov/partners/
FHWA Emergency Relief Program	Fund for the repair or reconstruction of Federal-aid highways that have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause	U.S. Department of Transportation (DOT)	https://www.fhwa.dot.gov/programadmin/erelief.cfm
Transportation Investment Generating Economic Recovery (TIGER)	Investing in critical road, rail, transit and port projects across the nation	U.S. DOT	https://www.transportation.gov/tags/tiger-grants
Community Facilities Direct Loan & Grant Program	This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial or business undertakings.	USDA	https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program
Emergency Loan Program	USDA's Farm Service Agency (FSA) provides emergency loans to help producers recover from production and physical losses due to drought, flooding, other natural disasters or quarantine	USDA	https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/emergency-farm-loans/index
Emergency Watershed Protection (EWP) program	Provide assistance to relieve imminent hazards to life and property caused by floods, fires, drought, windstorms, and other natural occurrences	NRCS	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/
Financial Assistance	Financial assistance to help plan and implement conservation practices that address natural resource concerns or	NRCS	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/

Program	Description	Lead Agency	Website
	opportunities to help save energy, improve soil, water, plant, air, animal and related resources on agricultural lands and non-industrial private forest land		
Emergency Management Performance Grants (EMPG) Program	Assist local, tribal, territorial, and state governments in enhancing and sustaining all-hazards emergency management capabilities	U.S. DHS	https://www.fema.gov/emergency-management-performance-grant-program
Reimbursement for Firefighting on Federal Property	Provides reimbursement only for direct costs and losses over and above normal operating costs.	U.S. DHS	https://www.usfa.fema.gov/grants/firefighting_federal_property.html
Department of Homeland Security Grant Program (HSGP)	HSGP is composed of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and the Operation Stonegarden (OPSG). Together, these competitive grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration.	U.S. DHS	https://www.dhs.gov/homeland-security-grant-program-hsgp
Land & Water Conservation Fund	Matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities (as well as funding for shared federal land acquisition and conservation strategies)	National Park Service	https://www.nps.gov/subjects/lwcf/index.htm
Land and Water Conservation Fund	Funding to states, local and conservation organizations for outdoor recreational development, renovation, land acquisition, and planning.	U.S. Department of the Interior	https://www.doi.gov/lwcf
USSBA	Small Business Administration (SBA) provides low-interest disaster loans to homeowners, renters, business of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.	Small Business Administration (SBA)	https://www.sba.gov/funding-programs/disaster-assistance

Program	Description	Lead Agency	Website
State			
Environmental Infrastructure Financing Program	Qualified borrowers receive loans in two equal parts: Approximately one half to three quarters comes from a 0-interest State Revolving Fund maintained by the NJDEP. The other portion comes from proceeds of highly rated tax-exempt revenue bonds sold by the Trust. Combining these two funds results in a loan that is 50 to 75% lower than traditional loan rates.	NJDEP	
Meadowlands Infrastructure Trust Fund	Grants are available for stormwater management, updating GIS systems, affordable housing planning, and solid waste disposal for the counties and municipalities that are under this Commission.	NJ Sports and Exposition Authority	
New Jersey Green Acres Program	It is financed with Garden State Preservation Trust funds through three partnering agencies: The Green Acres Program, a division of the Department of Environmental Protection to preserve natural lands and recreational parks. The Farmland Preservation Program is administered by the independent State Agriculture Development Committee to acquire the development rights on privately owned farmland. Historic Preservation Program is administered by the independent New Jersey Historic Trust to provide matching grants to save important historic buildings.	NJDEP	https://www.nj.gov/dep/greenacres/
New Jersey Small Cities Communities Development Block Grants	Provide funds for economic development, housing rehabilitation, community revitalization, and public facilities designated to benefit people with low and moderate incomes, or to address recent local needs for which no other source of funding is available to non-entitlement counties and municipalities.	NJDCA	https://www.nj.gov/dca/divisions/dhcr/offices/neighborhood.html
New Jersey Conservation Foundation (NJCF)	NJCF is a private, not-for-profit organization. Through acquisition and stewardship, NJCF protects strategic lands, promotes strong land use policies, and forges partnerships to achieve conservation goals. Grants to help fund preservation activities.	NJCF	https://www.njconservation.org/what-we-do/

Program	Description	Lead Agency	Website
The New Jersey Infrastructure Bank	Two programs provide and administer low interest rate loans to qualified municipalities, counties, regional authorities, and water purveyors in New Jersey. Approximately $350 million is awarded annually. 1. New Jersey Environmental Infrastructure Trust (NJEIT) for the purpose of financing water quality infrastructure projects that enhance ground and surface water resources, ensure the safety of drinking water supplies, protect the public health and make possible responsible and sustainable economic development. 2. The New Jersey Transportation Infrastructure Bank (NJTIB) is an independent State Financing Authority responsible for providing and administering low interest rate loans to qualified municipalities, counties, and regional authorities in New Jersey for the purpose of financing transportation quality infrastructure projects.	NJDEP	https://www.njib.gov/
New Jersey Water Bank	New Jersey Water Bank - NJWB (formerly New Jersey Environmental Infrastructure Financing Program - NJEIFP) is a partnership between the New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Environmental Infrastructure Trust (Trust) to provide low cost financing for the design, construction, and implementation of projects that help protect and improve water quality and help ensure safe and adequate drinking water.	NJDEP	https://www.nj.gov/dep/dwq/mface_njeifp.htm
Drinking Water State Revolving Fund (DWSRF)	The DWSRF program assists water systems in financing the cost of infrastructure through the use of federal and New Jersey Infrastructure Trust funds. Additionally, the Water Supply program provides operator licensing and training support as well as financial assistance through the DWSRF program.	NJDEP	https://www.state.nj.us/dep/watersupply/dws_loans.html

Program	Description	Lead Agency	Website
NJ Highlands	Highlands Regional Master Plan (RMP) grant funding for forest resource and stream corridor protection and management planning includes the identification of restoration, mitigation, and stewardship programming needs and mechanisms.	The New Jersey Highlands	https://www.highlands.state.nj.us/njhighlands/grantprograms/
New Jersey Department of Transportation (NJDOT)	Funding of the Program is typically federal through the Federal Highway Administration or State through the Transportation Trust Fund.	NJDOT	https://www.state.nj.us/transportation/business/localaid/funding.shtm
New Jersey Department of Transportation – Local Aid Program	Annually, local aid programs provide approximately $400 million in a combination of federal and state transportation trust fund funding. The Transportation Trust Fund for FY 2017 thru 2024 alone provides $310 million in state aid to municipalities and counties for local transportation improvements.	NJDOT	https://www.state.nj.us/transportation/business/localaid/funding.shtm

APPENDIX G. PLAN MAINTENANCE TOOLS

This appendix includes tools and worksheets to facilitate plan maintenance and review by the Essex County Steering and Planning Committees.

In the first year of the performance period, an online performance progress reporting system, the BATool[SM] will provide municipal and county representatives direct access to their mitigation initiatives to easily update the status of each project, document successes or obstacles to implementation, add or delete projects to maintain mitigation project implementation. This online program will capture information and roll all input into a report to summarize mitigation strategy progress.

The FEMA 386-4 guidance worksheets are also available to assist with progress reporting. These worksheets are provided below for ease of access to the HMP Coordinator and Planning Partnership to maintain the 2020 HMP throughout its period of performance.

Worksheet #1 Progress Report step 2

Progress Report Period: _____ to _____
(date) (date)

Project Title: _____ Project ID#: _____

Responsible Agency: _____

Address: _____

City/County: _____

Contact Person: _____ Title: _____

Phone #(s): _____ email address: _____

List Supporting Agencies and Contacts:

_____

_____

_____

Total Project Cost: _____

Anticipated Cost Overrun/Underrun: _____

Date of Project Approval: _____ Start date of the project: _____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): _____

_____

_____

Milestones	Complete	Projected Date of Completion

Plan Goal(s)/Objective(s) Addressed:

Goal: _____

Objective: _____

Indicator of Success (e.g., losses avoided as a result of the acquisition program):

In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.

_____

_____

Status (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

Project Status

☐ Project on schedule

☐ Project completed

☐ Project delayed*

*explain: _____

_____

☐ Project canceled

Project Cost Status

☐ Cost unchanged

☐ Cost overrun*

*explain: _____

_____

☐ Cost underrun*

*explain: _____

_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

_____

_____

_____

_____

B. What obstacles, problems, or delays did you encounter, if any?

_____

_____

_____

C. How was each problem resolved?

_____

_____

_____

Next Steps: What is/are the next step(s) to be accomplished over the next reporting period?

Other comments:

Worksheet #2 Evaluate Your Planning Team step 3

When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		
Comments/Proposed Action:		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?		
Comments/Proposed Action:		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?		
Comments/Proposed Action:		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?		
Comments/Proposed Action:		
Are there ways to gain more diverse and widespread cooperation?		
Comments/Proposed Action:		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?		
Comments/Proposed Action:		

If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.

Worksheet #3 Evaluate Your Project Results step 3

Project Name and Number: _____

_____

Project Budget: _____

_____

Project Description: _____

_____

_____

Associated Goal and Objective(s): _____

_____

_____

Indicator of Success (e.g., losses avoided): _____

_____

_____

Insert location map.

Include before and after photos if appropriate.

Was the action implemented? ☐ **YES** ☐ **NO**

IF NO

Why not?	**YES**	**NO**
Was there political support for the action?	☐	☐
Were enough funds available?	☐	☐
Were workloads equitably or realistically distributed?	☐	☐
Was new information discovered about the risks or community that made implementation difficult or no longer sensible?	☐	☐
Was the estimated time of implementation reasonable?	☐	☐
Were sufficient resources (for example staff and technical assistance) available?	☐	☐

IF YES

What were the results of the implemented action? _____

_____

_____

_____

_____

_____

_____

	YES	NO
Were the outcomes as expected? If No, please explain:		
Did the results achieve the goal and objective(s)? Explain how:		
Was the action cost-effective? Explain how or how not:		
What were the losses avoided after having completed the project?		
If it was a structural project, how did it change the hazard profile?		
Additional comments or other outcomes:		

Date: _____

Prepared by: _____

Worksheet #4 Revisit Your Risk Assessment step 4

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?			
Profile hazard events	Are new historical records available?			
	Are additional maps or new hazard studies available?			
	Have chances of future events (along with their magnitude, extent, etc.) changed?			
	Have recent and future development in the community been checked for their effect on hazard areas?			
Inventory assets	Have inventories of existing structures in hazard areas been updated?			
	Is future land development accounted for in the inventories?			
	Are there any new special high-risk populations?			
Estimate losses	Have loss estimates been updated to account for recent changes?			

If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.

Worksheet #1 Progress Report step 2

Progress Report Period: October 1, 2003 (date) to December 31, 2003 (date)

Project Title: Raging River Views Park Flood Acquisition Project Project ID#: HVMP-2003-01

Responsible Agency: Hazardville Department of Planning

Address: 1909 Burnham Way

City/County: Hazardville, Emergency

Contact Person: Eunice Euclid Title: Grants Administrator

Phone #(s): (555) 555-8473 email address: eeuclid@town.hazardville.en

List Supporting Agencies and Contacts:

Hazardville Department of Housing: Noah Hudson (555) 555-8465

Hazardville Habitat for Humanity: Carter Goodman (555) 555-9432

Total Project Cost: $360,000

Anticipated Cost Overrun/Underrun: $N/A

Date of Project Approval: July 21, 2003 Start date of the project: November 15, 2003

Anticipated completion date: Summer 2005

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase):

Acquire and demolish 14 structures located at the Raging River Views Park. Work with Habitat for Humanity and the Department of Housing to construct new housing or rehabilitate existing housing for displaced low-income residents. The Department of Housing will also provide funds for temporary housing to displaced residents.

Milestones	Complete	Projected Date of Completion
Conduct surveys of ground and first-floor elevations	✓	
Obtain Notices of Intent by owners	✓	
Conduct structure appraisals	✓	
Send letters of offer to homeowners		1/31/04
Perform title work		3/30/04
Acquire structures		6/30/04
Begin construction of new housing or reconstruction of existing housing for relocated residents		6/30/04
Send payment for relocation to renters		9/30/04
Finalize contract for demolition		1/12/05
Demolish structures		4/26/05
Landscape open parcels		6/30/05

Plan Goal(s)/Objective(s) Addressed:

Goal: Minimize losses to existing and future structures within hazard areas.

Objective: Reduce potential damages to the manufactured home park in the floodplain.

Indicator of Success (e.g., losses avoided as a result of the acquisition program):

In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.

Losses Avoided. After a major flood (100-year), the Department of Economic Development will assist the Planning Department in calculating the losses avoided.

Status (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

Project Status

- [x] Project on schedule
- [ ] Project completed
- [ ] Project delayed*

*explain:

- [ ] Project canceled

Project Cost Status

- [x] Cost unchanged
- [ ] Cost overrun*

*explain:

- [ ] Cost underrun*

*explain:

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

The Department of Planning contacted the owners of the properties vulnerable to floods to determine their willingness to sell their properties. Of the 14 property owners contacted, 10 agreed to have their homes acquired. An appraiser contracted by the Department of Planning estimated the value of the 10 properties.

B. What obstacles, problems, or delays did you encounter, if any?

The owners of four properties refused to sell. There has been some limited neighborhood opposition to various suggestions for the community open space created by the acquisitions.

C. How was each problem resolved?

The Department of Planning has proposed to the residents a design charrette to develop alternatives for the open space that would be created, with the understanding that no permanent structures can be constructed on the open parcels after acquisition and demolition has been completed. Recreational activities will be limited to passive uses such as trails and bike paths.

Next Steps: What is/are the next step(s) to be accomplished over the next reporting period?

1. Send offer letters to homeowners.
2. Do title work.
3. Work with the Department of Housing and Habitat for Humanity to identify existing housing for rehabilitation and viable vacant parcels to construct new housing for the displaced residents.

Other comments:

None

Adapted from the North Carolina HMGP Progress Report Form at http://www.dem.dcc.state.nc.us/mitigation/document_index.htm.

Worksheet #2 Evaluate Your Planning Team step 3

When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		✓
Comments/Proposed Action: NA		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?	✓	
Comments/Proposed Action: Hazardville Habitat for Humanity has been invaluable to assisting the relocation of former Raging River Views Park residents. The organization should be invited to participate in THORR.		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?	✓	
Comments/Proposed Action: It is essential that the Department of Public Works be represented at each meeting because so many mitigation actions involve them. However, representatives from the department have been unable to attend meetings consistently since the development of the plan. THORR will work with the departments director to find consistent, active representation.		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?	✓	
Comments/Proposed Action: Again, the Department of Public Works has been unable to provide timely progress reports of its mitigation actions. Administrative duties and paperwork have fallen through the cracks since the department has been assigned numerous new duties in Hazardville's mitigation efforts. Perhaps the department, in partnership with THORR, should approach the Town Council for funding for more department staff.		
Are there ways to gain more diverse and widespread cooperation?	✓	
Comments/Proposed Action: THORR members believe that better publicity about mitigation actions will garner more interest from the public, affected/interested organizations, and state agencies.		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?	✓	
Comments/Proposed Action: THORR has learned about new PDM funding. The state has asked that local jurisdictions submit applications for brick and mortar projects and risk assessments studies.		

If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.

Worksheet #3 Evaluate Your Project Results step 3

Project Name and Number:

Raging River Views Park Flood Acquisition Project (HVMP-2003-01)

Project Budget:

$360,000

Project Description:

Acquisition and demolition of 14 flood-prone structures

Associated Goal and Objective(s):

Goal: Minimize losses to existing and future structures within hazard areas

Objective: Reduce potential damages to the manufactured home park in the floodplain

Indicator of Success (e.g., losses avoided):

Losses avoided by acquisition and demolition of flood-prone structures



Town of Hazardville Composite Loss Map developed previously during risk assessment (see FEMA 386-2).

Was the action implemented? ☑ YES ☐ NO

IF NO

Why not?	YES	NO
Was there political support for the action?	☐	☐
Were enough funds available?	☐	☐
Were workloads equitably or realistically distributed?	☐	☐
Was new information discovered about the risks or community that made implementation difficult or no longer sensible?	☐	☐
Was the estimated time of implementation reasonable?	☐	☐
Were sufficient resources (for example staff and technical assistance) available?	☐	☐

IF YES

What were the results of the implemented action?

Of the 14 proposed properties, 10 were acquired. The benefit-cost ratio is 2.19, based on project benefits of $789,000 and costs of $360,274. Benefits are based on the net present value of the avoided damages over the project life. Furthermore, about 40 people are no longer in the path of a potential flood, making emergency rescue operations in that area less likely and evacuation easier.

	YES	NO
Were the outcomes as expected? If No, please explain:		✓
The project originally set out to acquire 14 properties. Four of the 14 owners did not want to participate in the buyout program.		
Did the results achieve the goal and objective(s)? Explain how:	✓	
Despite four properties still in harm's way, the objective has been largely met. See additional comments.		
Was the action cost-effective? Explain how or how not:	✓	
The FEMA Limited Data module was used to perform the benefit-cost analysis. Data for the analysis was collected from historical flood data and used as benchmarks in the before mitigation section of the analysis. The damages after mitigation section was left blank, due to the properties being permanently acquired, and the economic risk removed completely. The analysis resulted in a benefit-cost ratio of 2.19, with benefits totaling $789,000 for 10 properties.		
What were the losses avoided after having completed the project?		
Total avoided losses are $789,000 over the lifetime of the project (estimated at 100 years).		
If it was a structural project, how did it change the hazard profile?		
N/A		
Additional comments or other outcomes:		
The Planning Department has agreed to work with the remaining four homeowners in evaluating other flood-proofing options.		

Date: October 12, 2005

Prepared by: Hazardville Department of Economic Development
Hazardville Department of Planning

Worksheet #4 Revisit Your Risk Assessment step 4

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?		✓	
Profile hazard events	Are new historical records available?		✓	
	Are additional maps or new hazard studies available?	✓		Recently completed maps and studies showing vulnerability of the new coastal development to erosion and tidal surge are available.
	Have chances of future events (along with their magnitude, extent, etc.) changed?		✓	
	Have recent and future development in the community been checked for their effect on hazard areas?	✓		
Inventory assets	Have inventories of existing structures in hazard areas been updated?	✓		
	Is future land development accounted for in the inventories?	✓		The Planning Department is preparing a coastal development plan to ensure that any future development is set back far enough to be outside the erosion zones and the coastal high hazard areas. Current and future road configurations will also be studied to ensure adequate evacuation times before hurricane events.
	Are there any new special high-risk populations?	✓		Coastal residents and business owners.
Estimate losses	Have loss estimates been updated to account for recent changes?	✓		

If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.

APPENDIX H. LINKAGE PROCEDURES

1.1 Administrative Process for "Linkage" to the Essex County Hazard Mitigation Plan

Even though that initial development of the Essex County Hazard Mitigation Plan (HMP) included all municipalities in the County, not all eligible local governments within the defined planning area are included in this plan. Completed jurisdictional annexes are presented in Section 9. Any non-participating local governments and other local jurisdictions such as Fire Districts, Utility Districts, School Districts and any other eligible local government as defined in 44 CFR 201.2 within the Essex County planning area can join this plan as a participating jurisdiction and to ultimately achieve approved status by following the linkage procedures defined in this appendix.

It is assumed that some or all of these non-participating local governments may choose to "link" to the plan at some point in time to gain eligibility for programs under the Disaster Mitigation Act (DMA). In addition, some of the current partnership may not continue to meet eligibility requirements due to the lack of active participation as prescribed by the plan. These "linkage" procedures will define the requirements established by the Essex County HMP Steering Committee and all planning partners for dealing with the increase or decrease in planning partners linked to this plan. It should be noted that currently non-participating jurisdictions within the defined planning area are not obligated to link to this plan. These jurisdictions can choose to do their own "complete" plan that addresses all required elements of section 201.6 of 44CFR.

1.2 Increasing the Partnership Through Linkage

Eligibility

Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period. Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period (5 years after final approval). Eligibility will be determined by the following factors:

- The linking jurisdiction is a local government as defined by the DMA.
- The boundaries or service area of the linking jurisdiction is completely contained within the boundaries of the planning area established during the 2020 hazard mitigation plan development process.
- The linking jurisdiction's critical facilities and lifelines were included in the critical facility, lifeline and infrastructure risk assessment completed during the 2020 plan development process.

Requirements

It is expected that linking jurisdictions will complete the requirements outlined below and submit their completed template to the Hazard Mitigation Planning Coordinator - Essex County Office of Emergency Management - for review within six months of beginning the linkage process:

1. The Essex County HMP Steering Committee has established an annual window for which linkage to the plan can occur. Linking jurisdictions are instructed to complete the following procedures during this time frame.

2. The current non-participating jurisdiction contacts the Essex County Hazard Mitigation Planning Coordinator for the plan and requests a "Linkage Package". The Essex County Hazard Mitigation Planning Coordinator is:

Captain Edward Esposito

Essex County Office of Emergency Management

560 Northfield Road

West Orange, New Jersey 07052

essexoem@essexsheriff.com

3. The Essex County Hazard Mitigation Planning Coordinator will provide a linkage packages that includes:

   - Copy of Volume 1 and 2 of the plan (electronic)
   - Planning Partner's Expectations Sheet
   - A Sample "Letter of Intent" to Link to the Plan
   - A Jurisdictional Template and Instructions
   - Catalog of Hazard Mitigation Alternatives or the Mitigation Catalog
   - A copy of Section 201.6 of Chapter 44, the Code of Federal Regulations (44CFR), which defines the federal requirements for a local hazard mitigation plan

4. The new jurisdiction will be required to review both volumes of the plan which includes the following key components for the planning area:

   - The Essex County risk assessment
   - The plan's goals and objectives
   - Plan implementation and maintenance procedures
   - Catalog of potential mitigation actions
   - County-wide initiatives

   Once this review is complete, the jurisdiction will complete its specific jurisdictional annex by following the template and its instructions for completion provided by the Essex County Hazard Mitigation Planning Coordinator. Technical assistance can be provided upon request by completing the request for technical assistance (TA) form provided in the linkage package. This TA may be provided by the Essex County Hazard Mitigation Planning Coordinator or any other resource within the Planning Partnership such as a member of the HMP Steering Committee, Planning Committee or a currently participating jurisdiction. The Essex County Hazard Mitigation Planning Coordinator will determine who will provide the TA and the possible level of TA based on resources available at the time of the request.

5. The new jurisdiction will also be required to develop a public involvement strategy that ensures their public's ability to participate in the plan development process. At a minimum, the new jurisdiction must make an attempt to solicit public opinion on hazard mitigation at the onset of this linkage process and a minimum of one public meeting to present their draft jurisdiction specific annex for comment, prior to adoption by the governing body. The Planning Partnership will have available resources to aid in the public involvement strategy such as the Plan website. However, it will be the new jurisdiction's responsibility to implement and document this strategy for incorporation into their annex.

   It should be noted that the Jurisdictional Annex templates do not include a section for the description of the public process. This is because the original partnership was covered under a uniform public involvement strategy that covered the operational area that is described in volume 1 of the plan. Since the new partner was not addressed by that strategy, they will have to initiate a new strategy, and add a description of that strategy to their annex. For consistency, new partners are encouraged to follow the public involvement format utilized by the initial planning effort as described in Volume 1 of the plan.

6. Once their public involvement strategy is completed and they have completed their template, the new jurisdiction will submit the completed package to the Essex County Hazard Mitigation Planning Coordinator for a pre-adoption review to ensure conformance with the Regional plan format.

7. The Essex County Hazard Mitigation Planning Coordinator will review for the following:

   - Documentation of public involvement and mitigation action development strategies
   - Conformance of template entries with guidelines outlined in instructions
   - Chosen actions are consistent with goals, objectives, and mitigation catalog of Essex County Hazard Mitigation Plan
   - Designated point of contact

   The Essex County Hazard Mitigation Planning Coordinator may utilize members of the HMP Planning Committee or other resources to complete this review. All proposed linked annexes will be submitted to the HMP Planning Committee for their review and comment prior to submittal to the New Jersey Office of Emergency Management – Mitigation Unit (NJOEM).

8. Plans approved and accepted by the HMP Planning Committee will then be forwarded to NJOEM for review with cover letter stating the forwarded plan meets local approved plan standards and whether the plan is submitted with local adoption or for criteria met/plan not adopted review.

9. NJOEM will review plans for state and federal compliance. Non-compliant plans are returned to the jurisdiction for correction. Compliant plans are forwarded to FEMA Region II office for review with annotation as to the adoption status.

10. FEMA Region II reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. Region II notifies new jurisdiction of results of review with copies to NJOEM and approved planning authority.

11. New jurisdiction corrects plan's shortfalls (if necessary) and resubmits to NJOEM through the approved plan lead agency.

12. For plans with no shortfalls that have not been adopted from the Region II review or outstanding corrected shortfalls, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards adoption resolution to Region II with copies to lead agency and NJOEM.

13. Region II Director notifies new jurisdiction governing authority of plan approval.

The new jurisdiction plan is then included with Essex County HMP and the linking jurisdiction is committed to participate in the ongoing plan implementation and maintenance identified in Volume 1 of the HMP.