

Purpose of Meeting:	Planning Partnership Mitigation Strategy \	Norkshop
Location of Meeting: Yates County Auditorium (417 Liberty Street, Penn Yan, NY)		
Date of Meeting:	May 30, 2024 @ 9:00 A.M.	
Attendees: • Yates Cour	nty	• Middlesex (T)
o Jessic	a Mullins, Yates County Administrator	<ul> <li>None</li> </ul>
-	e A. Roets, Director, Yates County Community	• Milo (T)
	es Department	<ul> <li>Anthony Validzic, Codes Enforcement Officer</li> </ul>
_	Battin, Director of Finance, Yates County	• Penn Yan (V)
	tment of Finance D. Miller, Commissioner, Yates County Department	• Chris Brand, Village of Penn Yan Street Department
	ial Services	• Potter (T) • Tim Pagel, Code Enforcement Officer
	Rapalee, Highway Superintendent, Yates County	Rushville (V)
	/ay Department	• Tim Pagel, Code Enforcement Officer
_	roth, Director of Information Technology (IT),	• Starkey (T)
	County IT	<ul> <li>Ralph Warren, Highway Superintendent</li> </ul>
	Caves, Deputy Director, Yates County Office of	• Torrey (T)
-	gency Services (OES)	<ul> <li>Tim Chambers, Highway Superintendent</li> </ul>
	Bailey, Emergency Medical System (EMS) linator, Yates County OES	<ul> <li>Grant Downs, Councilman</li> </ul>
	yers, Yates County Planner, Yates County Planning	Cornell Cooperative Extension Yates County
	evelopment Department	Sandi Bastedo, Executive Director
	Palmer, Probation Director, Yates County	Caroline Boutard-Hunt, Agricultural Educator     Kouka College
	tion Department	Keuka College     Jim Cunningham, Director of Campus Safety
o Doug	Sinclair, Director of Public Health, Yates County	Ontario County Planning Department
	Health Department	<ul> <li>Linda Phillips, Planner</li> </ul>
	s Ryan, Sheriff, Yates County Sheriff's Office	New York State Department of Health
	t Cilino, Communications Support Specialist, Yates	<ul> <li>Albert Cheverie, Preparedness Representative</li> </ul>
	y Sheriff's Office on Jensen, Undersheriff, Yates County Sheriff's	New York State Department of Transportation, Region (
Office		<ul> <li>Timothy Alimossy, Regional Emergency Manager</li> </ul>
Barrington		New York State Division of Homeland Security and
_	Wheeler, Highway Superintendent	Emergency Services
• Benton (T)		<ul> <li>Kevin Clapp, Supervisor, Hazard Mitigation Planning</li> <li>Scott Feuerstein, Planning Manager</li> </ul>
o None		Scott Feuerstein, Planning Manager     New York State Police
<ul> <li>Dresden (V</li> </ul>	,	<ul> <li>Brian Bernard, EM Supervisor</li> </ul>
	m Hall, Mayor	Tetra Tech
• Dundee (V		<ul> <li>Tony Subbio, Project Manager, Tetra Tech</li> </ul>
	Cratsley, Mayor	<ul> <li>Emily Vassallo, Planner, Tetra Tech</li> </ul>
<ul> <li>Italy (T)</li> </ul>	Post Highway Cuparintondant	
	Best, Highway Superintendent rd Craig, Supervisor	
• Jerusalem		
	Hurd, Highway Superintendent	
	McKinley, Code Enforcement	
	L. Sisson, Supervisor	

action, and identify potential 2025 mitigation actions.





ltem No.	Description	Action item(s):
1	Introductions	-
2	<ul> <li>Project Status</li> <li>Tetra Tech provided an overview on the status of the project, including the anticipated timeline.</li> <li>Tetra Tech reminded attendees to log their time on the project using the ln Kind Tracking tool</li> </ul>	<ul> <li>Planning Partnership</li> <li>Attendees will log their time in the In- Kind Tracking tool.</li> </ul>
3	the In-Kind Tracking tool. Identifying and Developing Mitigation Strategies	
5	<ul> <li>The Mitigation Strategy is the County's roadmap to reduce the risk of hazards identified in the HMP. The strategy is based on hazard impacts, asset vulnerability, and the County's capabilities.</li> <li>Mitigation Actions are specific activities, such as policies, projects, and</li> </ul>	
	<ul> <li>studies, that stakeholders identify to reduce risk.</li> <li>Forward-looking and incorporates changing conditions for the life of the County's assets.</li> <li>Consider changing demographics, development patterns, and impacts of climate change.</li> </ul>	
	<ul> <li>Examples of actions may include elevating electrical and HVAC equipment to reduce the likelihood of damage from floodwaters or planting trees to lower temperatures exacerbated by pavement.</li> <li>Actions in the plan are eligible for certain types of FEMA</li> </ul>	
	<ul> <li>funding.</li> <li>What is a <i>Mitigation Strategy</i>?         <ul> <li>A group of projects or actions to reduce the impacts of the hazards of concern on your community</li> <li>Plans and Regulations</li> <li>Structure and Infrastructure Studies and Projects</li> <li>Natural Systems Protection Studies and Projects</li> <li>Education and Awareness Programs</li> </ul> </li> </ul>	-
	<ul> <li>Terms to describe the <u>Mitigation Strategy</u> include:</li> <li>Mitigation Action Plan or Action Plan</li> <li>Mitigation Projects or Initiatives or Actions</li> </ul>	
	<ul> <li>Need a clear connection between vulnerabilities identified in the risk assessment and proposed mitigation actions.</li> <li>The capability assessment can provide insight into challenges and apparturities for the mitigation strategy.</li> </ul>	
	<ul> <li>opportunities for the mitigation strategy.</li> <li>All actions proposed in the mitigation strategy must have a factual basis tied to the results of the risk and capability assessments. <i>This should not be a wish list</i>!</li> </ul>	
	<ul> <li>Hazards of concern include dam failure, disease outbreak, drought, extreme temperature, flood, harmful algal blooms, hazardous materials, landslide, transportation accident, severe weather, severe winter weather, and utility failure. Attendees reported having varying</li> </ul>	





	<ul> <li>experiences with the power company regarding clearing trees from power lines.</li> <li>Jurisdictions can leverage their capabilities to reduce risk to hazards.</li> <li>Actions should align with the goals and objectives of the updated HMP.</li> </ul>	
4	Review Previous Actions	Planning Partnership
	<ul> <li>Review the mitigation actions your jurisdiction identified in the previous HMP by providing a brief status narrative. Begin by providing the status headings below and then add details (what has been accomplished, what funding was used, anything holding back progress):         <ul> <li>IN PROGRESS: Started but not complete</li> <li>ONGOING CAPABILITY: An action you now complete on a regular basis (maintenance, annual outreach, etc.). These actions will be included in your capabilities moving forward.</li> <li>NO PROGRESS: Not started</li> <li>COMPLETE: Finished</li> </ul> </li> </ul>	<ul> <li>Complete outstanding worksheets and submit to assigned Tetra Tech planner.</li> </ul>
	Actions that are COMPLETE or ONGOING will not be carried forward.	
5	<ul> <li>Developing New Potential Actions</li> <li>Quality not quantity         <ul> <li>Each action needs detailed information on the why, who, what, and when of the action.</li> </ul> </li> <li>2020 projects</li> </ul>	
	<ul> <li>If a project is not finished and is still a priority, include it in 2025 HMP.</li> <li>Remove general projects or make them more specific.</li> <li>Remove ongoing capabilities like maintenance or annual outreach.</li> </ul>	
	• Each hazard needs at least one mitigation action unless a municipality	
	has no risk from a particular hazard of concern.	
	<ul> <li>If your jurisdiction has Repetitive Loss Properties, an action is needed to mitigate the properties (elevation or acquisition) with specifics (street or neighborhood names, not specific addresses).</li> <li>Improvements to the 2025 HMP from the 2020 HMP include a stronger connection between the risk assessment and mitigation strategy, including more specific, achievable actions, and having at least one</li> </ul>	-
	action for each hazard of concern. Individual actions can address more than one hazard.	
	<ul> <li>Four types of Mitigation Actions:         <ul> <li>Plans and regulations</li> <li>Structure and Infrastructure</li> <li>Natural systems protection</li> <li>Education and awareness</li> </ul> </li> </ul>	
6	Next Steps	Planning Partnership
-	• Complete your worksheets, ask questions, and provide to Tetra Tech staff.	<ul> <li>Complete your worksheets, ask questions, and</li> </ul>





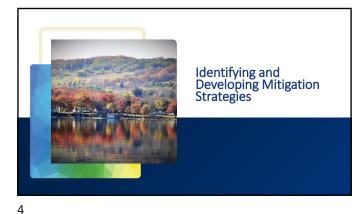
7	<ul> <li>Continue to share information about the HMP Update via social media, community groups, and networks. Let Tetra Tech know who you share information with.</li> <li>Work with Tetra Tech planners to complete annexes and finalize actions.</li> </ul>	<ul> <li>Provide an update to Tetra Tech staff on any missing worksheets, when you will submit them, and how Tetra Tech can assist you.</li> <li>Continue to share information about the HMP Update via social media, community groups, and networks. Let Tetra Tech know who you share information with.</li> <li>Work with Tetra Tech planners to complete annexes and finalize actions.</li> </ul>
	Attendees had no questions at this time.	
8	Breakouts	
	<ul> <li>Attendees split into breakout groups to discuss and develop mitigation actions for inclusion in the HMP.</li> </ul>	-

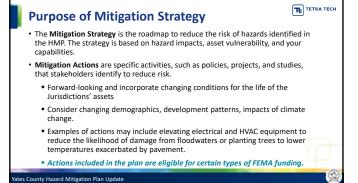


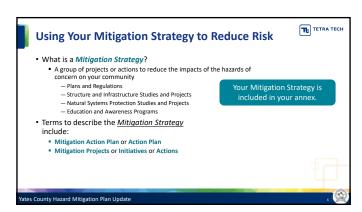




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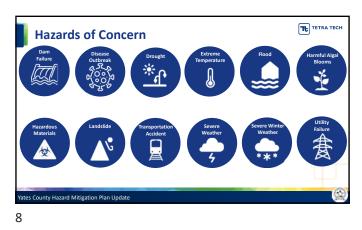


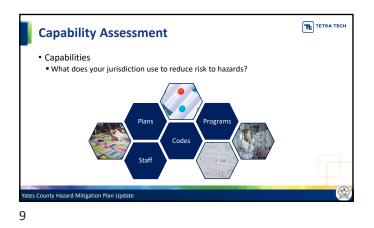


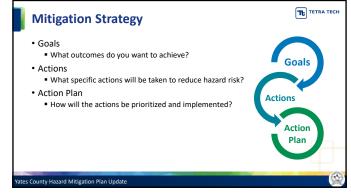


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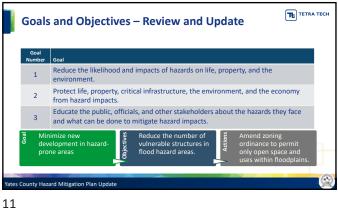








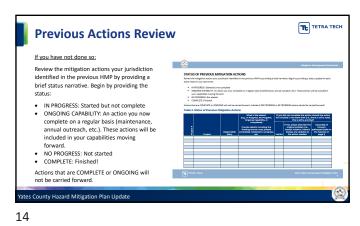


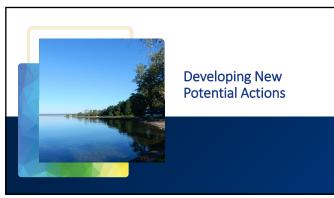


Goa	Is and Objectives Review and Update
Objective Number	Objectives
1.1	Develop and/or update local regulations based on current information and best practices.
1.2	Maintain natural systems to reduce the impacts of hazards.
2.1	Acquire, retrofit, or relocate structures from flood-prone areas.
2.2	Retrofit critical infrastructure to protect against hazard impacts.
2.3	Enhance stormwater management infrastructure.
2.4	Ensure that critical facilities can continue to function during and after hazard impacts.
2.5	Encourage residents and business owners to insure their property against hazard impacts, including through flood insurance through the National Flood Insurance Program (NFIP).
3.1	Work with legislators to develop and enact legislation that reduces long-term vulnerability to hazards.
3.2	Ensure that local officials attend current training on regulatory issues and best practices.
3.3	Provide information to individuals throughout the county on the hazards they face and what property protection measures they can take.

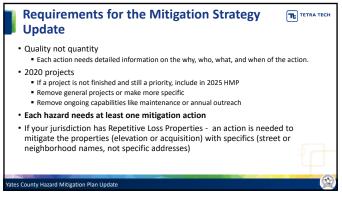




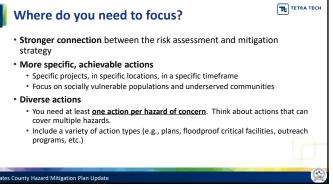


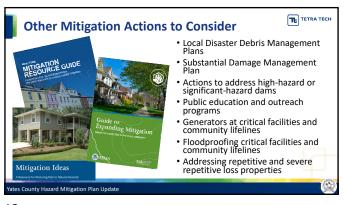




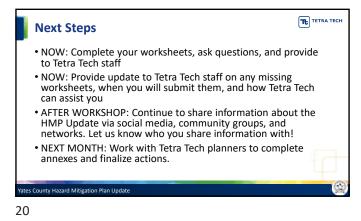
























- 1. Opening Remarks
- 2. Project Status where we are in the process, public outreach
- 3. Identifying and Developing Mitigation Strategies
- 4. Review Previous Actions
- 5. Developing New Potential Actions
- 6. Next Steps continue developing actions and work with Tetra Tech staff to complete outstanding worksheets prior to leaving today
- 7. Questions
- 8. Breakouts

#### **Yates County Project Contacts**

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**Tetra Tech Project Contact** Tony Subbio, CEM, CFM, PMP (717) 839-5654 | <u>tony.subbio@tetratech.com</u>

#### **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)
- Natural Systems Protection (NSP)

Education and Awareness Programs (EAP)

- Structure and Infrastructure Projects (SIP)
- Mitigation Type Description Examples Local Plans and These actions include government authorities, Comprehensive plans Regulations policies, or codes that influence the way land and Land use ordinances buildings are developed and built. Subdivision regulations Development review Building codes and enforcement NFIP Community Rating System Capital improvement programs Open space preservation Stormwater management regulations and master plans Acquisitions and elevations of Structure and These actions involve modifying existing Infrastructure Projects structures and infrastructure to protect them from structures in flood prone areas a hazard or remove them from a hazard area. Utility undergrounding This could apply to public or private structures as Structural retrofits well as critical facilities and infrastructure. Floodwalls and retaining walls Detention and retention structures This type of action also involves projects to Culverts construct manmade structures to reduce the Safe rooms impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program. Natural Systems These are actions that minimize damage and Sediment and erosion control Protection losses and also preserve or restore the functions Stream corridor restoration of natural systems. Forest management Conservation easements Wetland restoration and preservation Education and These are actions to inform and educate citizens. Radio or television spots Websites with maps and information elected officials, and property owners about Awareness Programs hazards and potential ways to mitigate them. Real estate disclosure These actions may also include participation in Presentations to school groups or national programs, such as StormReady or neighborhood organizations Firewise Communities. Although this type of Mailings to residents in hazard-prone mitigation reduces risk less directly than areas structural projects or regulation, it is an important StormReadv foundation. A greater understanding and Firewise Communities awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.



	DAM FAILURE	
Personal Scale	Corporate Scale	Government Scale
<ul> <li>Personal Scale</li> <li>Manipulate the hazard: <ul> <li>None</li> </ul> </li> <li>Reduce exposure to the hazard: <ul> <li>Relocate out of dam failure inundation areas.</li> </ul> </li> <li>Reduce vulnerability to the hazard: <ul> <li>Elevate home to appropriate levels.</li> </ul> </li> <li>Increase Capability: <ul> <li>Learn about risk reduction for the dam failure hazard.</li> <li>Learn the evacuation routes for a dam failure event.</li> <li>Educate yourself on early warning systems and the dissemination of</li> </ul> </li> </ul>	<ul> <li>Corporate Scale</li> <li>Manipulate the hazard: <ul> <li>Remove dams.</li> <li>Harden dams.</li> </ul> </li> <li>Reduce exposure to the hazard: <ul> <li>Replace earthen dams with hardened structures.</li> <li>Relocate facilities out of dam failure inundation areas.</li> </ul> </li> <li>Reduce vulnerability to the hazard: <ul> <li>Floodproof facilities within dam failure inundation areas.</li> </ul> </li> <li>Educate employees on the probable impacts of a dam failure.</li> </ul>	<ul> <li>Manipulate the hazard:         <ul> <li>Remove dams.</li> <li>Harden dams.</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>Replace earthen dams with hardened structures.</li> <li>Relocate critical facilities out of dam failure inundation areas.</li> <li>Consider open space land use in designated dam failure inundations areas.</li> </ul> </li> <li>Reduce vulnerability to the hazard:         <ul> <li>Adopt higher floodplain standards in mapped dam failure inundation areas.</li> </ul> </li> </ul>
warnings.	• Develop a continuity of operations plan.	<ul> <li>Retrofit critical facilities within dam failure inundation areas.</li> <li>Increase Capability:         <ul> <li>Map dam failure inundation areas.</li> <li>Enhance emergency operations plans to include a dam failure component.</li> <li>Institute monthly communications checks with dam operators.</li> <li>Inform the public on risk reduction techniques.</li> <li>Adopt real-estate disclosure requirements for the re-sale of property located within dam failure inundation areas.</li> <li>Consider the probable impacts of climate change in assessing the risk</li> </ul> </li> </ul>

associated with the dam failure hazard.



	DAM FAILURE	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Establish early warning capability downstream of listed high-hazard dams.</li> <li>Consider the residual risk associated with protection provided by dams in future land use decisions.</li> </ul>



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DISEASE OUTBREAK			
Personal Scale	Corporate Scale	Government Scale	
Manipulate the Hazard:	Manipulate the Hazard:	Manipulate the Hazard:	
o None	o None	o None	
• Reduce exposure to the hazard:	• Reduce exposure to the hazard:	• Reduce exposure to the hazard:	
• Proper hygiene.	o PPE.	o PPE.	
o PPE.	<ul> <li>Social distancing.</li> </ul>	<ul> <li>Social distancing.</li> </ul>	
<ul> <li>Social distancing.</li> </ul>	• Reduce vulnerability to the hazard:	• Reduce vulnerability to the hazard:	
• Reduce vulnerability to the hazard:	<ul> <li>Distanced work environment.</li> </ul>	<ul> <li>Distanced work environment.</li> </ul>	
• Focus on personal health.	• Regular cleaning of work environment.	• Regular cleaning of work environment.	
Increase Capability:	Increase Capability:	Increase Capability:	
<ul> <li>Storage of PPE.</li> </ul>	<ul> <li>Storage of PPE.</li> </ul>	<ul> <li>Storage of PPE.</li> </ul>	
• Storage of supplies and food to reduce	<ul> <li>Equipment for monitoring.</li> </ul>	• Equipment for monitoring/treatment.	
need to enter public spaces.	<ul> <li>Trainings for staff.</li> </ul>	<ul> <li>Trainings for staff.</li> </ul>	
		• Public outreach.	



	DROUGHT		
Personal Scale	Corporate Scale	Government Scale	
<ul> <li>Manipulate the Hazard:         <ul> <li>None</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>Consider stored water/captured water techniques during dry seasons.</li> <li>Establishing an irrigation time/scheduling program or process so that all agricultural land gets the required amount of water. Through incremental timing, each area is</li> </ul> </li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>None</li> </ul> </li> <li>Reduce exposure to the hazard:             <ul> <li>Consider stored water/captured water techniques during dry seasons.</li> </ul> </li> <li>Reduce vulnerability to the hazard:                 <ul> <li>Drought resistant landscapes.</li> <li>Reduce private water system losses.</li> <li>Identify alternate water supply sources.</li> </ul> </li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>Ground Water Recharge through stormwater management.</li> <li>Implement cloud seeding techniques during dry seasons.</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>Identify and create ground water back up sources.</li> <li>Create /identify new impounded water supply points.</li> </ul> </li> </ul>	
irrigated at different times so that all water is not consumed at the same time. Spacing usage may also help with recharge of groundwater.	<ul> <li>Install low-flow water saving showerheads and toilets.</li> <li>Adjust sprinklers to water the lawn and not the sidewalk or street.</li> </ul>	<ul> <li>Developing new or upgrading existing water delivery systems to eliminate breaks and leaks.</li> <li>Reduce vulnerability to the hazard:</li> </ul>	
<ul> <li>Reduce vulnerability to the hazard:         <ul> <li>Drought resistant landscapes.</li> <li>Reduce water system losses.</li> <li>Regularly check for leaks to minimize water supply losses.</li> <li>Install low-flow water saving showerheads and toilets.</li> <li>Turn water flow off while brushing teeth or during other cleaning activities.</li> <li>Adjust sprinklers to water the lawn and not the sidewalk or street.</li> </ul> </li> </ul>	<ul> <li>Increase Capability:</li> <li>Practice active water conservation.</li> <li>Develop a COOP.</li> <li>Create a water conservation plan.</li> </ul>	<ul> <li>Water use conflict regulations.</li> <li>Reduce water system losses.</li> <li>Distribute water saving kits.</li> <li>Identify sites ideally suited for ground water recharge.</li> <li>Implement stormwater retention in regions ideally suited for groundwater recharges.</li> <li>Utilize drought resistant landscapes on community owned facilities.</li> <li>Encourage citizens to take water- saving measures.</li> </ul>	
<ul> <li>Run the dishwasher and washing machine only when they are full.</li> <li>Check for leaks in plumping or dripping faucets.</li> <li>Install rain-capturing devices for irrigation.</li> </ul>		<ul> <li>Increase Capability:         <ul> <li>Public education on drought resistance.</li> <li>Identify alternative water supplies fo time of drought. Mutual aid</li> </ul> </li> </ul>	





		DROUGHT	
<ul> <li>e</li> <li>R</li> <li>d</li> <li>fi</li> <li>e</li> <li>P</li> <li>w</li> <li>e</li> <li>Incr</li> <li>P</li> <li>te</li> <li>Se</li> <li>w</li> </ul>	Install graywater systems in homes to incourage water reuse. Notate crops by growing a series of different types of crops on the same fields every season to reduce soil rosion. Nanting "cover crops," such as oats, wheat, and buckwheat, to prevent soil rosion. <b>Trease Capability:</b> Practice active water conservation echniques. eek ways to operate wells in such a way to enhance their functional ongevity and supply capability.		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. Consider providing incentives to property owners that utilize drought resistant landscapes in the design of their homes. Use of water buffalo tankers. 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.



	EXTREME TEMPERATURE				
	Personal Scale	Corporate Scale	Government Scale		
•	<ul> <li>Manipulate the Hazard:</li> <li>Increase tree plantings</li> <li>Installation of green roofs to provide shade and remove heat</li> <li>Use cool roofing products that reflect sunlight and heat away from a built in the state of the</li></ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>Increase tree plantings</li> <li>Installation of green roofs to provide shade and remove heat</li> <li>Use cool roofing products that reflect sunlight and heat away from a</li> </ul> </li> </ul>	<ul> <li>to provide shade and remove heat</li> <li>Encourage the use of cool roofing products that reflect sunlight and heat</li> </ul>		
•	building <b>Reduce exposure to the hazard</b> :	<ul> <li>building</li> <li><i>Reduce exposure to the hazard:</i></li> </ul>	<ul> <li>away from a building</li> <li><i>Reduce exposure to the hazard:</i></li> <li>None</li> </ul>		
•	<ul> <li>None</li> <li>Reduce vulnerability to the hazard:</li> <li>Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold</li> </ul>	<ul> <li>None</li> <li>Reduce vulnerability to the hazard:         <ul> <li>Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold</li> </ul> </li> </ul>	<ul> <li>Reduce vulnerability to the hazard:         <ul> <li>Require minimum temperatures in housing/landlord codes</li> </ul> </li> </ul>		
•	Increase Capability • None	<ul> <li>Increase Capability:         <ul> <li>Set rules restricting outdoor work during extreme temperature events</li> </ul> </li> </ul>	dangers of extreme heat and cold and		



FLOOD					
Personal Scale Corporate Scale Government Scale					
<ul> <li>Manipulate the Hazard: <ul> <li>Clear stormwater drains and culverts.</li> </ul> </li> <li>Reduce exposure to the hazard: <ul> <li>Locate or re-locate outside of hazard area.</li> <li>Institute low impact development techniques on property.</li> </ul> </li> <li>Reduce vulnerability to the hazard: <ul> <li>Retrofit existing structures and utilities above Base Flood Elevation (BFE).</li> <li>Floodproof existing structures (wet- or dry floodproofing).</li> <li>Store hazardous materials above BFE or outside of floodprone areas.</li> </ul> </li> <li>Increase Capability: <ul> <li>Develop household mitigation plan, such as retrofit savings, communication capability with outside, 72-hr. self-sufficiency during and after an event.</li> <li>Buy flood insurance.</li> </ul> </li> </ul>	<ul> <li>Manipulate the Hazard: <ul> <li>Clear stormwater drains and culverts.</li> </ul> </li> <li>Reduce exposure to the hazard: <ul> <li>Locate business critical facilities or functions outside hazard area.</li> <li>Institute low impact development techniques on property.</li> </ul> </li> <li>Reduce vulnerability to the hazard: <ul> <li>Build redundancy for critical functions/retrofit critical buildings.</li> <li>Provide flood-proofing measures when new critical infrastructure must be located in floodplains.</li> <li>Harden structures and infrastructure (wet and dry-floodproofing).</li> <li>Store hazardous materials above BFE or outside of floodprone areas.</li> </ul> </li> <li>Increase Capability: <ul> <li>Increase capability by having cash reserves for reconstruction.</li> <li>Develop and adopt a Continuity of Operations Plan (COOP).</li> <li>Solicit 'cost-sharing" through partnerships with private sector stakeholders on projects with multiple benefits.</li> <li>Dam owner/operators should continue to be aware of and understand dam inspection and reporting requirements.</li> <li>Ensure that all dam EAP's are kept in compliance with State Regulations.</li> </ul></li></ul>	<ul> <li>Manipulate the Hazard: <ul> <li>Clear stormwater drains and culverts</li> <li>Dredging, levee construction, providing retention areas.</li> <li>Structural flood control: levee's, dams, channelization, revetments.</li> <li>Construct regional stormwater control facilities.</li> <li>Lead and develop a county-wide stream clearing strategy including the development of thresholds for response/action.</li> </ul> </li> <li>Reduce exposure to the hazard: <ul> <li>Locate/re-locate critical facilities outside of hazard area.</li> <li>Acquire or relocate identified repetitive loss properties.</li> <li>Promote open space uses in identified high hazard areas via techniques such as: PUD's, easements, setbacks, greenways, sensitive area tracks.</li> <li>Adopt land development criteria such as PUD's, Density transfers, clustering.</li> <li>Institute low impact development techniques on property.</li> <li>Acquire vacant land or promote open space uses in runoff.</li> <li>Pass an ordinance to incorporate additional zoning classifications into flood zones within each municipality.</li> </ul> </li> </ul>			



	FLOOD	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Increase floodplain standards within municipal ordinances and include provisions for enforcing best practice standards.</li> <li>Consider increasing minimum freeboard beyond state requirements.</li> <li>Continue development application reviews by County Planning Board to reduce risky development practices.</li> <li>Reduce vulnerability to the hazard:         <ul> <li>Harden structures and infrastructure (wet and dry-floodproofing).</li> <li>Provide redundancy for critical functions and infrastructure.</li> <li>Adopt appropriate regulatory standards such as cumulative substantial improvement/damage, freeboard, lower substantial damage threshold, compensatory storage.</li> <li>Stormwater management regulations and master planning.</li> <li>Adopt "no-adverse impact" floodplain management policies that strive to not increase the flood risk on down-stream communities.</li> <li>Participate in the Community Rating System (CRS).</li> <li>Implement as-built regulatory requirements.</li> <li>Implement site review ordinances/requirements.</li> </ul> </li> </ul>





	FLOOD	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Establish stream maintenance programs with stakeholders (e.g. Soil and Water Conservation District) - support county leads of such efforts.</li> <li>Incorporate retrofitting/replacement of critical facilities and infrastructure in Capital Improvement Plans (CIPs).</li> <li>Promote the use of vegetation/plants as green erosion control measures to reduce localized flooding.</li> <li>Work with environmental groups to address removal of debris, log jams, etc. in flood vulnerable stream sections.</li> <li>Increase Capability:         <ul> <li>Produce better hazard maps, and improve access to flood hazard mapping</li> <li>Capture/survey "high-water" marks during flood events.</li> <li>Provide technical information and guidance on appropriate mitigation options available to businesses and homeowners.</li> <li>Enact tools to help manage development in hazard areas (stronger controls, tax incentives, information).</li> <li>Establish an additional layer of zoning within flood hazard areas.</li> <li>Develop strategy to take advantage of post disaster opportunities.</li> <li>Improve compliance with and enforcement of the NFIP.</li> </ul> </li> </ul>





	FLOOD	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Develop mitigation partnerships with regional stakeholders.</li> <li>Join Community Rating System (CRS) program, or improve level of participation in CRS.</li> <li>Develop and implement a public information strategy for flood hazard awareness, flood insurance (NFIP) and mitigation.</li> <li>Maintain existing data as well as gather new data needed to define risks and vulnerability.</li> <li>Create a building and elevation inventory of structures in the floodplain</li> <li>Identify flood prone areas that may be in need of new flood studies.</li> <li>Establish a program to identify and educate owners of flood-prone properties of potential mitigation options (e.g. elevations, relocations).</li> <li>Charge a hazard mitigation fee on all new permits to create a hazard mitigation funding source for initiatives or grant cost share requirements.</li> <li>Integrate floodplain management policies into other planning mechanisms within the planning area.</li> <li>Establish a Stormwater Utility to deal with urban drainage/flooding issues.</li> <li>Establish incentives to promote flood hazard mitigation of private property (e.g. permit fee waivers).</li> </ul>



	FLOOD	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Adopt ordinances/standards for cumulative damages and/or improvements.</li> <li>Upgrade NFIP Floodplain ordinance, as well as other ordinances to current or above current state and federal standards.</li> <li>Develop and adopt a COOP.</li> <li>Join "Storm Ready" Program.</li> <li>Participate in county and regional training programs.</li> <li>Provide additional training/certification to NFIP floodplain administrators and code officials.</li> <li>Implement annual training to account for turnover of municipal officials.</li> <li>Maintain and enhance flood forecasting ability, including the establishment and maintenance of critical stream gages.</li> <li>Explore grant funding opportunities and potential partnerships to help maintain existing gages and install additional gages to improve forecasting and flood warning ability.</li> <li>Promote awareness and participation in alert systems.</li> <li>Support and participate in regional flood management efforts.</li> <li>Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones.</li> </ul>



	FLOOD	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Provide continued and enhanced training for emergency responders.</li> <li>Establish a revolving "bank" or budget line item to fund grant application support.</li> <li>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.</li> <li>Provide trainings for FPA's on the NFIP/Floodplain Best Practices and also pursue CFM accreditation for municipal FPA's.</li> <li>Build and maintain relationships to develop regional watershed/floodplain mitigation solutions.</li> <li>Pursue grant funding opportunities to fund repairs of catchments and infrastructure on a proactive basis.</li> <li>Explore grant funding opportunities related to climate change to fund mitigation projects.</li> </ul>



HARMFUL ALGAL BLOOMS		
Personal Scale	Corporate Scale	Government Scale
<ul> <li>Manipulate the Hazard:</li> <li>Participate in quarantine, control, or eradication programs.</li> <li>Reduce exposure to the hazard:</li> <li>Comply with harmful algal bloom rules and regulations to minimize the exposure to HAB.</li> <li>Reduce vulnerability to the hazard:</li> <li>Form citizen action groups to promote awareness and best practices on local levels.</li> <li>Increase Capability:</li> <li>Regularly check the NJ DEP HAB information page for updated information.</li> <li>Broaden collaborations focused on ecosystem restoration and ecosystem-based management.</li> </ul>	<ul> <li>Manipulate the Hazard: <ul> <li>None</li> </ul> </li> <li>Reduce exposure to the hazard: <ul> <li>None</li> </ul> </li> <li>Reduce vulnerability to the hazard: <ul> <li>None</li> </ul> </li> <li>Increase Capability: <ul> <li>Build and maintain partnerships with government agencies, academia, and stakeholders to coordinate information sharing, and response for Invasive Species and Harmful Algal Blooms throughout the county/region.</li> </ul></li></ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>Work with Federal/State agencies of quarantine, control, or eradication programs.</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>Create/disseminate planting guides which explain which types of plants and vegetation are safe to plant within the county.</li> </ul> </li> <li>Reduce vulnerability to the hazard:         <ul> <li>Pass municipal ordinances to enform best practices for HAB at the local level.</li> </ul> </li> <li>Increase Capability:         <ul> <li>Build and maintain partnerships with other stakeholders to coordinate information sharing, and response of HAB throughout the county/region</li> <li>Work with federal/state agencies to disseminate information to local municipalities regarding HAB from the NJ DEP and US EPA.</li> <li>Disseminate information to the general public to educate them on HAB.</li> <li>Work with stakeholders to identify and expand resources for prevention and early detection of HAB.</li> <li>Broaden collaborations focused on ecosystem restoration and ecosystem-based management.</li> </ul> </li> </ul>



	HARMFUL ALGAL BLOOMS	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Build ecological restoration planning into IS management projects.</li> </ul>



		HAZARDOUS MATERIALS	
	Personal Scale	Corporate Scale	Government Scale
•	<ul> <li><i>Manipulate the Hazard</i>:</li> <li>Identify and eliminate sources of potential hazardous material spills.</li> <li><i>Reduce exposure to the hazard</i>:</li> <li>Increase distance between hazardous material sites and development.</li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>Identify and eliminate sources of potential hazardous material spills.</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>None</li> </ul> </li> <li>Reduce vulnerability to the hazard:</li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>Identify and eliminate sources of potential hazardous material spills.</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>Increase inspection of hazardous material facilities and transport</li> </ul> </li> </ul>
•	Reduce vulnerability to the hazard:	o None	vehicles.
	o None	Increase Capability:	<ul> <li>Reduce vulnerability to the hazard:</li> </ul>
•	<ul> <li><i>Increase Capability:</i></li> <li>Personal planning for potential event.</li> </ul>	<ul> <li>Increase inspection of hazardous material facilities and transport vehicles.</li> <li>Conduct training for response.</li> </ul>	<ul> <li>None</li> <li>Increase Capability:         <ul> <li>Increase inspection of hazardous material facilities and transport vehicles.</li> <li>Conduct training for response.</li> <li>Public outreach.</li> </ul> </li> </ul>





	LANDSLIDE	
Personal Scale	Corporate Scale	Government Scale
<ul> <li>Manipulate the Hazard:</li> <li>Apply soil stabilization measures, such as planting soil stabilizing vegetation on steep slopes.</li> <li>Reduce exposure to the hazard: <ul> <li>None</li> </ul> </li> <li>Reduce vulnerability to the hazard: <ul> <li>None</li> </ul> </li> <li>Increase Capability: <ul> <li>None</li> </ul> </li> </ul>	<ul> <li>Manipulate the Hazard:</li> <li>None</li> <li>Reduce exposure to the hazard:</li> <li>None</li> <li>Increase Capability:</li> <li>None</li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>Implement reinforcement measures in high-risk areas.</li> <li>Use debris flow measures that may reduce damage in sloping areas, such as stabilization, emergency dissipation, and flow control measures.</li> <li>Apply soil stabilization measures, such as planting soil stabilizing vegetation on steep, publicly owned slopes.</li> </ul> </li> <li>Reduce exposure to the hazard:         <ul> <li>Consider hazard areas in land-use planning, zoning, and development siting.</li> <li>Acquire structures in highest hazard areas (demolish and convert to restricted open space).</li> <li>Relocation of Structures.</li> <li>Open Space Preservation.</li> <li>Create or increase setback limits on parcels near high-risk parcels.</li> </ul> </li> <li>Reduce vulnerability to the hazard:         <ul> <li>Consider hazard areas in land-use planning and development siting.</li> <li>Stabilize vulnerable slopes near</li> <li>Structures and infrastructure.</li> <li>Work with stakeholders such as USGS to develop appropriate risk reduction strategies.</li> <li>Install catch-fall nets for rocks at steep slopes near roadways.</li> </ul> </li></ul>





LANDSLIDE		
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Increase Capability:         <ul> <li>Increase understanding of hazard areas (e.g. Landslide Susceptibility Maps) -geotechnical surveys, LIDAR and mapping.</li> <li>Assessing vegetation in wildfire-prone areas to prevent landslides after fires (e.g. encourage plants with strong root systems).</li> <li>Work with stakeholders such as USGS to develop appropriate risk reduction strategies.</li> <li>Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones.</li> <li>Develop county-level programs to document slide events (landslide inventory), and maintain its currency.</li> </ul> </li> </ul>





Personal Scale
<ul> <li>Manipulate the Hazard:</li> <li>Increase tree plantings.</li> <li>Installation of green roofs to provide shade and remove heat.</li> <li>Use cool roofing products that reflect sunlight and heat away from a building.</li> <li>Reduce exposure to the hazard:</li> <li>None</li> <li>Reduce vulnerability to the hazard:</li> <li>Retrofit structures (improved roofing, glazing, insulation, etc.).</li> <li>Provide for redundant heat and power.</li> <li>Contact municipality or utilities to trim or remove trees that could affect power lines.</li> <li>Plant appropriate trees near home and power lines ("Right tree, right place" National Arbor Day Foundation Program.</li> <li>Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold.</li> <li>Increase Capability</li> <li>Improve awareness of impending severe weather (e.g. obtain a NOAA weather radio).</li> <li>Provide for redundant heat and power.</li> </ul>



	SEVERE STORM	
Personal Scale	Corporate Scale	Government Scale
	<ul> <li>Monitor impending storm events so that you can release employees in such a manner as to not negatively impact emergency response personnel/services.</li> <li>Set rules restricting outdoor work during extreme temperature events.</li> </ul>	<ul> <li>Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors.</li> <li>Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines.</li> <li>Promote awareness and participation in alert systems.</li> <li>Provide NOAA weather radios to the public.</li> <li>Create/Enhance "mutual aid" agreements for response to all emergencies.</li> <li>Create/identify evacuation routes to be utilized during severe storm events.</li> <li>Develop debris management plans.</li> <li>Join "Storm-Ready" program.</li> <li>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.</li> <li>Promote emergency power supplies to private property.</li> <li>Improve, expand, or harden communications facilities and services.</li> </ul>



	SEVERE STORM	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Recruit additional emergency personnel or use mutual aid agreements.</li> <li>Increase sheltering capabilities.</li> <li>Increase capability to respond to power outages and downed power lines. Establish partnerships with utility providers through pro-active planning.</li> <li>Educate citizens regarding the dangers of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.</li> <li>Establish warming and cooling centers.</li> <li>Establish extreme temperature planning in emergency operation plans.</li> <li>Create a database to track those individuals at high risk of death such as the elderly, homeless, etc.</li> </ul>



		WINTER STORM	
	Personal Scale	Corporate Scale	Government Scale
•	<ul> <li>Manipulate the Hazard:</li> <li>None</li> <li>Reduce exposure to the hazard:</li> <li>Plant appropriate trees near home and power lines ("Right tree, right place" National Arbor Day Foundation).</li> <li>Reduce vulnerability to the hazard:</li> <li>Insulate House to provide greater thermal efficiency and reduce heat loss.</li> <li>Provide redundant heat and power.</li> <li>Insulate Structure.</li> <li>Ensure natural gas input/release</li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>None</li> </ul> </li> <li>Reduce exposure to the hazard:             <ul> <li>None</li> </ul> </li> <li>Reduce vulnerability to the hazard:                 <ul> <li>Relocate critical infrastructure, such as power lines, underground.</li> <li>Reinforce or relocate critical infrastructure such as powerlines so that it meets performance expectations.                     <ul> <li>Install tree wire.</li> </ul> </li> <li>Increase Capability:                  <ul> <li>Trim or remove trees that could</li> </ul> </li> </ul> </li> </ul>	<ul> <li>Manipulate the Hazard:         <ul> <li>None</li> </ul> </li> <li>Reduce exposure to the hazard:             <ul> <li>None</li> </ul> </li> <li>Reduce vulnerability to the hazard:             <ul> <li>Harden infrastructure such as locating utilities underground where appropriate.</li> <li>Trimming trees back from power lines.</li> <li>Designate snow routes and strengthen critical road sections and bridges.</li> <li>Adopt codes and regulations that</li> </ul> </li> </ul>
•	<ul> <li>valves do not get covered in snow.</li> <li><i>Increase Capability:</i> <ul> <li>Trim or remove trees that could affect power lines.</li> <li>Prepare emergency food and supplies to be self-sufficient for at least 72 hours in the event of a severe winter storm.</li> <li>Be aware of inclement weather conditions and move your vehicles off of the street as severe weather systems approach.</li> <li>Retrofit structures.</li> </ul> </li> </ul>	<ul> <li>affect power lines.</li> <li>Create redundancy in utilities and communications.</li> <li>Develop a Continuity of Operations Plan (COOP) to address operations before, during and after coastal storm events.</li> <li>Utilize weather radios at the work place to keep your employees aware of severe weather conditions.</li> </ul>	<ul> <li>address the issues of parking of vehicles along roadways during severe weather events.</li> <li>Develop or enhance the capacity/capability of stormwater conveyance systems.</li> <li>Provide backup power sources at vita critical facilities.</li> <li>Increase Capability:         <ul> <li>Support programs that proactively manage problem areas by use of selective removal of hazardous trees, tree replacement, etc.</li> <li>Establish and enforce building codes that require all roofs to withstand snow loadsDevelop/Improve/Enforce building Codes in Hazard Areas.</li> </ul> </li> </ul>





WINTER STORM	1
Personal Scale Corporate Scale	Government Scale
	<ul> <li>Increase communication alternatives.</li> <li>Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors.</li> <li>Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines.</li> <li>Provide weather radios to vulnerable populations.</li> <li>Enhance public awareness campaigns to address those issues of alert and warning and actions to take during severe weather events.</li> <li>Utilize the best available technology to enhance the warning systems for all severe weather events (i.e.: tornado warning systems).</li> <li>Coordinate severe weather warning capabilities and the dissemination of warning amongst those agencies within the planning are with the highest degree of capability.</li> <li>Encourage local ordinances for planting tree near lines and join Tree City USA.</li> <li>Increase tree management programs.</li> </ul>





	WINTER STORM	
Personal Scale	Corporate Scale	Government Scale
		<ul> <li>Retrofit critical structures and promote hazard resistant construction.</li> <li>Keep open communications and education of hazards for mobile home communities.</li> <li>Retrofit above-ground utilities to underground facilities if appropriate.</li> <li>Create a salt reserve or research alternates to stretch salt reserve.</li> <li>Ensure accessibility to hospitals.</li> <li>Provide better debris logistics and removal.</li> <li>Provide better communication systems and back-up communication systems to inform public of hazards and to communicate during the hazard event.</li> </ul>





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