



## 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 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 HMP goals and objectives.

A Mission Statement was added to the HMP to ensure the focus of the plan to increase community resiliency and mitigation throughout the county:

*The mission of the Cape May County Multi-Jurisdictional Hazard Mitigation Plan is to protect the general health, safety, welfare, quality of life, environment and economy, and to support increased community resiliency and mitigation throughout Cape May County. The plan will accomplish this mission through reducing the vulnerability to natural disasters (particularly coastal flooding) through partnerships and careful planning.*

**Table F-1. Goal and Objective Evaluation**

Goal	Goal Evaluation (Keep as is? Change? Add another goal?)	Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
<b>Goal 1:</b> Protect Life and Property.	<b>Strategically</b> Protect Life and Property.	<i>Objective 1-1:</i> Protect critical facilities and infrastructure.	No Change
		<i>Objective 1-2:</i> Address repetitive and severe repetitive loss properties.	No Change
		<i>Objective 1-3:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	No Change
		<i>Objective 1-4:</i> Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.	No Change
		<i>Objective 1-5:</i> Identify and implement measures that enhance the capabilities of the County to better profile and assess exposure to natural and man-made hazards and develop appropriate risk reduction strategies.	No Change
		<i>Objective 1-6:</i> Better characterize flood/stormwater hazard events by conducting additional hazard studies and identify inadequate stormwater facilities and poorly drained areas.	No Change
		<i>Objective 1-7:</i> Develop, maintain, strengthen and promote enforcement of ordinances, regulations, plans and other mechanisms that facilitate hazard mitigation.	No Change



Goal	Goal Evaluation (Keep as is? Change? Add another goal?)	Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
		<i>Objective 1-8:</i> Integrate the recommendations of this plan into existing local programs.	
		<i>Objective 1-9:</i> Ensure that development is done according to modern and appropriate standards, including the consideration of natural hazard risk in land use planning and building design approval process.	<i>Objective 1-9:</i> Ensure that development is done according to modern, appropriate, and equitable standards, including the consideration of natural hazard risk in land use planning and building design approval process.
		<i>Objective 1-10:</i> Identify and pursue funding opportunities to address sea-level rise.	No Change
		<i>Objective 1-11:</i> Identify and pursue funding opportunities to develop and implement local and county mitigation activities.	No Change
			<i>Objective 1-12:</i> Incorporate future risk (including increased water levels and subsidence) into the mitigation planning process and mitigation project selection.
<b>Goal 2:</b> Increase Public Awareness and Preparedness of Natural and Man-Made Hazards and their Risks.	Promote public awareness, education, and preparedness of hazards and their risks.	<i>Objective 2-1:</i> Develop and implement program(s) to better understand the public’s level of individual and household preparedness to natural and man-made hazards.	<i>Objective 2-1:</i> Develop and implement program(s) to better understand the public’s level of individual and household preparedness and existing risk to natural and man-made hazards.
		<i>Objective 2-2:</i> Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual preparedness activities.	No Change
		<i>Objective 2-3:</i> Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).	No Change
		<i>Objective 2-4:</i> Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards, including providing incentives to mitigate.	No Change
		<i>Objective 2-5:</i> Provide information on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.	No Change
		<b>Suggestion:</b> Enhance public outreach and flood awareness to support public safety and Community Rating System projects.	



Goal	Goal Evaluation (Keep as is? Change? Add another goal?)	Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
<p><b>Goal 3:</b> Promote Sustainability (and Continuity of Operations and Government)</p>	<p>Promote Resiliency, Preparedness, and Continuity of Operations between Government, Businesses, and Community Groups and Organizations</p>	<p><i>Objective 3-1:</i> Promote the development of government and business continuity plans.</p>	<p>No Change</p>
		<p><i>Objective 3-2:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.</p>	<p>No Change</p>
		<p><i>Objective 3-3:</i> Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.</p>	<p>No Change</p>
		<p><i>Objective 3-4:</i> Develop and maintain adequate services and utilities to serve the County’s population, businesses, and tourism.</p>	<p><i>Objective 3-4:</i> Develop and maintain adequate services and utilities to serve the County’s population, <b>economy, government functions, and social needs.</b></p>
<p><b>Goal 4:</b> Enhance Disaster Preparedness, Response and Recovery</p>	<p>No Change</p>	<p><i>Objective 4-1:</i> Reduce general public dependency on disaster response and recovery support services.</p>	<p>No Change</p>
		<p><i>Objective 4-2:</i> Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.</p>	<p>No Change</p>
		<p><i>Objective 4-3:</i> Improve early detection, warning and emergency communication procedures and systems.</p>	<p>No Change</p>
		<p><i>Objective 4-4:</i> Maintain and update County and Local Emergency Management Plans to accommodate changes in the municipalities’ development patterns and vulnerability to natural and man-made hazard risk.</p>	<p>No Change</p>
		<p><i>Objective 4-5:</i> Where appropriate, coordinate and integrate hazard mitigation actions with existing local emergency operations plans.</p>	<p>No Change</p>
		<p><i>Objective 4-6:</i> Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.</p>	<p>No Change</p>
		<p><i>Objective 4-7:</i> Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.</p>	<p>No Change</p>
		<p><i>Objective 4-8:</i> Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.</p>	<p>No Change</p>
		<p><i>Objective 4-9:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of</p>	<p>No Change</p>



Goal	Goal Evaluation (Keep as is? Change? Add another goal?)	Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
		mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	
		<i>Objective 4-10:</i> Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities.	No Change
		<b><i>Suggestion: Elevate evacuation routes and systemically important roadways to reduce dangers posed by inundation.</i></b>	No Change
<p><b>Goal 5:</b> Protect Open Space, the Environment and Natural Resources</p>	<p>Protect Open Space, the Environment, and Natural Resources <b>Through Short and Long-Term Actions Focused on Preservation and Sustainability.</b></p>	<i>Objective 5-1:</i> Protect and preserve environmentally sensitive and critical areas.	<i>Objective 5-1:</i> <b>Identify</b> , protect, and preserve environmentally sensitive and critical areas.
		<i>Objective 5-2:</i> Protect and restore natural lands and features that serve to mitigate losses (including beaches, dunes, wetlands, floodplains, stream corridors, marine tidal marshes, and the back bay areas). Such lands should be clearly mapped and identified for protection.	No Change
		<i>Objective 5-3:</i> Continue to preserve, protect and acquire open space, particularly in high hazard areas. Include hazard considerations into the prioritization schema for land acquisition.	<i>Objective 5-3:</i> Continue to preserve, protect and acquire open space, <b>particularly in existing high hazard areas and those anticipated to become high hazard areas in the future.</b> Include hazard considerations into the prioritization schema for land acquisition.
		<i>Objective 5-4:</i> Incorporate coastal hazard considerations into land-use planning and natural resource management.	No Change
		<i>Objective 5-5:</i> Promote sustainable land development practices.	<i>Objective 5-5:</i> Promote sustainable <b>and equitable</b> land development practices <b>that direct future development away from vulnerable areas.</b>
		<i>Objective 5-6:</i> Maintain National Historic Landmark status of municipalities within the County through preservation of historic and architecturally significant sites.	<i>Objective 5-6:</i> Maintain National Historic Landmark status of municipalities within the County through preservation of historic and architecturally significant sites <b>with consideration of future hazard risk.</b>
			<i>Objective 5-7:</i> <b>Strengthen the County's Open Space Preservation Program to support acquisitions of vulnerable areas in the floodplain.</b>
<p><b>Goal 6:</b> Promote Partnerships</p>	No Change	<i>Objective 6-1:</i> Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.	No Change
		<i>Objective 6-2:</i> Strengthen inter-jurisdiction and inter-agency communication, coordination, and	No Change



Goal	Goal Evaluation (Keep as is? Change? Add another goal?)	Objective	Objective Evaluation (Keep as is? Change? Add another objective?)
		partnerships to foster hazard mitigation actions and/or projects.	
		<i>Objective 6-3: Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation actions more effectively.</i>	<i>No Change</i>
		<b><i>Suggestion: Encourage and support multi-jurisdictional mitigation projects that leverage funding and support from multiple levels of government and private groups.</i></b>	<b><i>Objective 6-4: Encourage and support multi-jurisdictional mitigation projects that leverage funding and support from multiple levels of government and community organizations.</i></b>

## F.2 MITIGATION STRATEGY WORKSHOP RESOURCES

On October 28, 2020 a Mitigation Strategy Workshop was held for all plan participants. The workshop was held virtually due to coronavirus restrictions and was co-led by NJOEM Mitigation Unit, FEMA Region II and the contract consultant, supplemented by emails and phone calls between jurisdictions and the contract consultant, for all participating jurisdictions to support the development of focused problem statements based on the impacts of natural hazards in the county and their communities. These problem statements were intended to provide a detailed description of the problem area, including its impacts to the municipality/jurisdiction; past damages; loss of service; etc. An effort was made to include the street address of the property/project location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements formed a bridge between the hazard risk assessment which quantifies impacts to each community with the development of actionable mitigation strategies. Resources available at the workshop and follow up discussions 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 Cape May County (Table F-3)
7. FEMA Project Useful Life factsheet
8. Mitigation funding sources at the federal, state and local levels (Table F-4)
9. FEMA Region 2 Funding Sources for New Jersey
10. FEMA Ecosystem Services

### 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	<p>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.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p> <p>Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.</p>	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.



CLIMATE CHANGE AND SEA LEVEL RISE		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Relocate outside of areas prone to sea level rise</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Retrofit/elevate structures</li> <li>○ Purchase flood insurance</li> </ul> </li> <li>• <b>Increase Capability</b> <ul style="list-style-type: none"> <li>○ Improve awareness of hazard and insurance options</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Relocate outside of areas prone to sea level rise</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Relocate critical infrastructure, such as power lines, underground</li> <li>○ Retrofit structures, elevate mechanicals</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Improve awareness of sea level rise</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Relocate infrastructure outside of areas prone to sea level rise</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Protect and restore natural buffers</li> <li>○ Recognize sea level rise and erosion areas as a hazard overlay for planning</li> <li>○ Limit new development and critical infrastructure inside the sea level rise hazard area</li> <li>○ Develop design standards for development inside sea level rise area</li> <li>○ Incentivize improved flood risk management</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Increase awareness of sea level rise</li> </ul> </li> </ul>





COASTAL EROSION		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Retrofit/elevate structures</li> <li>○ Purchase flood insurance</li> </ul> </li> <li>• <b>Increase Capability</b> <ul style="list-style-type: none"> <li>○ Improve awareness of hazard and insurance options</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Relocate critical infrastructure, such as power lines, underground</li> <li>○ Retrofit structures, elevate mechanicals</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Improve awareness of hazard and insurance options</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Support sustainable and resilient land use and community development</li> <li>○ Recognize sea level rise and erosion areas as a hazard overlay for planning</li> <li>○ Limit new development and critical infrastructure inside the coastal erosion hazard area</li> <li>○ Develop design standards for development inside areas prone to coastal erosion</li> <li>○ Incentivize improved flood risk management</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Develop guidance and checklist for developers to assist with integration and incorporation of green and sustainable approaches</li> <li>○ Encourage property owners to purchase flood insurance</li> </ul> </li> </ul>





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



DROUGHT		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <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 irrigated at different times so that all water is not consumed at the same time. Spacing usage may also help with recharge of groundwater.</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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> <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> <li>○ Install graywater systems in homes to encourage water reuse.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Consider stored water/captured water techniques during dry seasons.</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Drought resistant landscapes</li> <li>○ Reduce private water system losses</li> <li>○ Identify alternate water supply sources.</li> <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> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Practice active water conservation</li> <li>○ Develop a COOP</li> <li>○ Create a water conservation plan.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ Ground Water Recharge through stormwater management</li> <li>○ Implement cloud seeding techniques during dry seasons.</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Identify and create ground water back up sources.</li> <li>○ Create /identify new impounded water supply points.</li> <li>○ Developing new or upgrading existing water delivery systems to eliminate breaks and leaks.</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Public education on drought resistance</li> <li>○ Identify alternative water supplies for time of drought. Mutual aid agreements with alternative suppliers.</li> <li>○ Develop a drought contingency plan</li> </ul> </li> </ul>



DROUGHT		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>○ Rotate crops by growing a series of different types of crops on the same fields every season to reduce soil erosion.</li> <li>○ Planting “cover crops,” such as oats, wheat, and buckwheat, to prevent soil erosion.</li> <li>● <b>Increase Capability</b> <ul style="list-style-type: none"> <li>○ Practice active water conservation techniques.</li> <li>○ Seek ways to operate wells in such a way to enhance their functional longevity and supply capability.</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>○ Develop criteria-"triggers" for drought related actions</li> <li>○ Improve accuracy of water supply forecasts</li> <li>○ Provide incentives to influence active water conservation techniques such as water user rate reductions.</li> <li>○ Establish protocol for saltwater desalinization to be implemented during conditions of severe drought.</li> <li>○ Consider providing incentives to property owners that utilize drought resistant landscapes in the design of their homes.</li> <li>○ Use of water buffalo tankers</li> <li>○ Promote well usage techniques that strive to enhance functional longevity and supply capability of private water supply wells.</li> <li>○ Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.</li> </ul>



FLOOD		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ Clear stormwater drains and culverts</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Locate or re-locate outside of hazard area</li> <li>○ Institute low impact development techniques on property</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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>• <b>Increase Capability</b> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ Clear stormwater drains and culverts</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Locate business critical facilities or functions outside hazard area</li> <li>○ Institute low impact development techniques on property</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <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> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ Clear stormwater drains and culverts</li> <li>○ Dredging, levee construction, providing retention area.</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>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <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: easements, setbacks, greenways, sensitive area tracks.</li> <li>○ Adopt land development criteria such as density transfers, clustering</li> <li>○ Institute low impact development techniques on property</li> <li>○ Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff</li> <li>○ Pass an ordinance to incorporate additional zoning classifications into flood zones within each municipality.</li> <li>○ Increase floodplain standards within municipal ordinances and include</li> </ul> </li> </ul>



FLOOD		
Personal Scale	Corporate Scale	Government Scale
	<ul style="list-style-type: none"> <li>○ Ensure that all dam EAP's are kept in compliance with NJDEP regulations.</li> </ul>	<p>provisions for enforcing best practice standards.</p> <ul style="list-style-type: none"> <li>● <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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> <li>○ Establish stream maintenance programs with stakeholders - 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> </ul> </li> </ul>



FLOOD		
Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"> <li>○ Work with groups to address removal of debris, log jams, etc. in flood vulnerable stream sections</li> <li>● <b>Increase Capability:</b> <ul style="list-style-type: none"> <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 (Cicero as an example)</li> <li>○ Develop strategy to take advantage of post disaster opportunities</li> <li>○ Improve compliance with and enforcement of the NFIP</li> <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> </ul> </li> </ul>



FLOOD		
Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"> <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> <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 standards.</li> <li>○ Develop and adopt a COOP</li> <li>○ Join "Storm Ready" Program</li> <li>○ Participate in county and regional training programs</li> </ul>





FLOOD		
Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"> <li>○ Provide additional training/certification to NFIP floodplain administrators and code officials.</li> <li>○ Implement annual training to account for high turnover of municipal officials.</li> <li>○ Maintain and enhance flood forecasting ability, including the establishment and maintenance of critical stream gages</li> <li>○ Promote awareness and participation in alert systems such as CodeRED or Swift911</li> <li>○ Support and participate in regional flood management efforts, such as the Flood Mitigation Task Force or similar efforts</li> <li>○ Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones.</li> <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>○ Explore grant funding opportunities and potential partnerships to help maintain existing gages and install additional gages to improve forecasting ability.</li> </ul>



FLOOD		
Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"> <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>



**SEVERE STORMS/HURRICANE/NOR'EASTER**

Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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> </ul> </li> <li>• <b>Increase Capability</b> <ul style="list-style-type: none"> <li>○ Improve awareness of impending severe weather (e.g. joining CodeRED or Swift911, obtain a NOAA weather radio)</li> <li>○ Promote 72-hour self-sufficiency</li> <li>○ Provide for redundant heat and power</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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.</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Contact municipality or utilities to trim or remove trees that could affect power lines</li> <li>○ Create redundancy (e.g. backup generators)</li> <li>○ Improve awareness of impending severe weather (e.g. joining CodeRED or Swift911, obtain a NOAA weather radio)</li> <li>○ Develop a Continuity of Operations Plan (COOP)</li> <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> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Harden infrastructure such as locating utilities underground.</li> <li>○ Trimming trees back from power lines</li> <li>○ Designate snow routes and strengthen critical road sections and bridges.</li> <li>○ Adopt ordinances that regulate the type and quantity of trees planted near utility lines</li> <li>○ Relocate critical infrastructure, such as power lines, underground</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Support programs such as "Tree Watch" that proactively manage problem areas by use of selective removal of hazardous trees, tree replacement, etc.</li> <li>○ Enforce building codes that require all roofs to withstand snow loads.</li> <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>○ Promote awareness and participation in alert systems such as CodeRED or Swift911</li> </ul> </li> </ul>



**SEVERE STORMS/HURRICANE/NOR'EASTER**

Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"> <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> <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.</li> </ul> <p>Establish partnerships with utility providers through pro-active planning.</p>

*Note: Mitigation strategies for coastal erosion and coastal flooding caused by nor'easters and hurricanes are noted in the Coastal Erosion and Flood catalogs.*



## SEVERE WINTER STORMS

Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Plant appropriate trees near home and power lines (“Right tree, right place” National Arbor Day Foundation)</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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 valves do not get covered in snow</li> </ul> </li> <li>• <b>Increase Capability</b> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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.</li> <li>○ Install tree wire</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Trim or remove trees that could 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> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <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 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 vital critical facilities.</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <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 loads-Develop/Improve/Enforce building Codes in Hazard Areas</li> <li>○ Increase communication alternatives</li> <li>○ Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors.</li> </ul> </li> </ul>



SEVERE WINTER STORMS		
Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"> <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> <li>○ Join the Community Rating System</li> <li>○ Join "Storm-Ready"</li> <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 hospital.</li> </ul>





SEVERE WINTER STORMS		
Personal Scale	Corporate Scale	Government Scale
		<ul style="list-style-type: none"><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>





TSUNAMI		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Retrofit/elevate structures</li> <li>○ Purchase flood insurance</li> </ul> </li> <li>• <b>Increase Capability</b> <ul style="list-style-type: none"> <li>○ Improve awareness of hazard and insurance options</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Retrofit structures and infrastructure, elevate mechanicals</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Improve awareness of hazard and insurance options</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Strengthen coastal dune systems</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Recognize tsunami areas as a hazard overlay for planning</li> <li>○ Limit new development and critical infrastructure tsunami areas</li> <li>○ Develop design standards for development inside tsunami areas</li> <li>○ Retrofit and elevate structures and infrastructure</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Build tsunami shelters</li> <li>○ Increase public awareness of tsunami hazard and tsunami emergency planning</li> </ul> </li> </ul>



WILDFIRE		
Personal Scale	Corporate Scale	Government Scale
<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ Clear potential fuels on property; dry, overgrown underbrush; diseased trees</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Clean and maintain defensible space around structures</li> <li>○ Locate outside hazard area</li> <li>○ Mow regularly</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Create and maintain defensible space around structures, provide water on site.</li> <li>○ Use fire-retardant building materials</li> <li>○ Create defensible spaces around your home.</li> </ul> </li> <li>• <b>Increase Capability</b> <ul style="list-style-type: none"> <li>○ Employ Firewise techniques to safeguard your home</li> <li>○ Identify alternative water supply points proximate to your home such as swimming pools, lakes, streams</li> <li>○ Support your local fire department</li> <li>○ Be aware of weather conditions that support/enhance the probability of wildfires</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Create and maintain defensible space around structure and infrastructure and provide water onsite</li> <li>○ Use fire-retardant building materials</li> <li>○ 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</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ Support Firewise community initiatives</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Manipulate the Hazard:</b> <ul style="list-style-type: none"> <li>○ None</li> </ul> </li> <li>• <b>Reduce exposure to the hazard:</b> <ul style="list-style-type: none"> <li>○ Clear fuels (dry underbrush, diseased trees) on land that can trigger and maintain wildfires</li> <li>○ Implement Best Management Practices on public lands</li> </ul> </li> <li>• <b>Reduce vulnerability to the hazard:</b> <ul style="list-style-type: none"> <li>○ Create and maintain defensible space around structure and infrastructure</li> <li>○ Higher regulatory standards</li> <li>○ Establish water main supply and hydrants in un-hydranted areas</li> <li>○ Decrease hydrant spacing</li> </ul> </li> <li>• <b>Increase Capability:</b> <ul style="list-style-type: none"> <li>○ More public outreach and education efforts including an active "Firewise" program</li> <li>○ Identify fire response and alternative evacuation routes</li> <li>○ Seek alternative water supplies in urban wildland interface areas.</li> <li>○ Become a "Firewise" community</li> <li>○ 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.</li> <li>○ Develop/implement wildfire management plans.</li> <li>○ Establish Mutual Aid Agreements</li> <li>○ Develop a Water Supply Plan</li> </ul> </li> </ul>



### 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 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. NJ Mitigation Funding Sources**

Program	Description	Lead Agency	Website
<b>Federal</b>			
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	<a href="https://www.fema.gov/hazard-mitigation-assistance">https://www.fema.gov/hazard-mitigation-assistance</a>
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	<a href="https://www.fema.gov/flood-mitigation-assistance-grant-program">https://www.fema.gov/flood-mitigation-assistance-grant-program</a>
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	<a href="https://www.fema.gov/hazard-mitigation-grant-program">https://www.fema.gov/hazard-mitigation-grant-program</a>
Building Resilient Infrastructure and Communities (BRIC)	Supports states, local communities, tribes and territories to undertake hazard mitigation projects by reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.	FEMA	<a href="https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities">https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities</a>
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	<a href="https://www.fema.gov/news-release/2017/05/03/4309/fema-hazard-mitigation-grants-404-and-406">https://www.fema.gov/news-release/2017/05/03/4309/fema-hazard-mitigation-grants-404-and-406</a>



Program	Description	Lead Agency	Website
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 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.	FEMA	<a href="https://www.fema.gov/welcome-assistance-firefighters-grant-program">https://www.fema.gov/welcome-assistance-firefighters-grant-program</a>
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	<a href="https://www.grants.gov/web/grants/view-opportunity.html?oppId=316238">https://www.grants.gov/web/grants/view-opportunity.html?oppId=316238</a>
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	<a href="https://www.fema.gov/fire-management-assistance-grant-program">https://www.fema.gov/fire-management-assistance-grant-program</a>
Disaster Housing Program	Emergency assistance for housing, including minor repair of home to establish livable conditions, mortgage and rental assistance	HUD	<a href="https://www.hud.gov/program_offices/public_indian_housing/publications/dhap">https://www.hud.gov/program_offices/public_indian_housing/publications/dhap</a>
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	<a href="https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/">https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/</a>
HUD Disaster Recovery Assistance	Grants to fund gaps in available recovery assistance after disasters (including mitigation)	HUD	<a href="https://www.hud.gov/info/disasterresources">https://www.hud.gov/info/disasterresources</a>
Section 108 Loan Guarantee	Enables states and local governments participating in the Community Development Block Grant (CDBG) program	HUD	<a href="https://www.hudexchange.info/programs/section-108/">https://www.hudexchange.info/programs/section-108/</a>



Program	Description	Lead Agency	Website
	to obtain federally guaranteed loans for disaster-distressed areas		
Smart Growth Implementation Assistance (SGIA) program	The SGIA program focuses on complex or cutting-edge issues, such as stormwater management, code revision, transit-oriented development, affordable housing, infill 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.	EPA	<a href="https://www.epa.gov/smartgrowth">https://www.epa.gov/smartgrowth</a>
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	<a href="https://www.fws.gov/partners/">https://www.fws.gov/partners/</a>
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)	<a href="https://www.fhwa.dot.gov/programadmin/erelief.cfm">https://www.fhwa.dot.gov/programadmin/erelief.cfm</a>
Transportation Investment Generating Economic Recovery (TIGER)	Investing in critical road, rail, transit and port projects across the nation	U.S. DOT	<a href="https://www.transportation.gov/tags/tiger-grants">https://www.transportation.gov/tags/tiger-grants</a>
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	<a href="https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program">https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program</a>
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	<a href="https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/emergency-farm-loans/index">https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/emergency-farm-loans/index</a>



Program	Description	Lead Agency	Website
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	<a href="https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/">https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/</a>
Financial Assistance	Financial assistance to help plan and implement conservation practices that address natural resource concerns or opportunities to help save energy, improve soil, water, plant, air, animal and related resources on agricultural lands and non-industrial private forest land	NRCS	<a href="https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/">https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/</a>
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	<a href="https://www.fema.gov/emergency-management-performance-grant-program">https://www.fema.gov/emergency-management-performance-grant-program</a>
Reimbursement for Firefighting on Federal Property	Provides reimbursement only for direct costs and losses over and above normal operating costs.	U.S. DHS	<a href="https://www.usfa.fema.gov/grants/firefighting_federal_property.html">https://www.usfa.fema.gov/grants/firefighting_federal_property.html</a>
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	<a href="https://www.dhs.gov/homeland-security-grant-program-hsgp">https://www.dhs.gov/homeland-security-grant-program-hsgp</a>
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	<a href="https://www.nps.gov/subjects/lwcf/index.htm">https://www.nps.gov/subjects/lwcf/index.htm</a>
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	<a href="https://www.doi.gov/lwcf">https://www.doi.gov/lwcf</a>
USSBA	Small Business Administration (SBA) provides low-interest disaster loans to homeowners, renters, business of all sizes,	Small Business	<a href="https://www.sba.gov/funding-programs/disaster-assistance">https://www.sba.gov/funding-programs/disaster-assistance</a>



Program	Description	Lead Agency	Website
	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.	Administration (SBA)	
<b>State</b>			
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	
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	<a href="https://www.nj.gov/dep/greenacres/">https://www.nj.gov/dep/greenacres/</a>
New Jersey Blue Acres Program	The Blue Acres Program is the part of New Jersey's Green Acres Program that purchases floodprone properties. Properties (including structures) that have been damaged by, or may be prone to incurring damage caused by, storms or storm-related flooding, or that may buffer or protect other lands from such damage, are eligible for acquisition	NJDEP	<a href="https://www.nj.gov/dep/greenacres/blue_flood_ac.html">https://www.nj.gov/dep/greenacres/blue_flood_ac.html</a>
New Jersey Small Cities Communities	Provide funds for economic development, housing rehabilitation, community revitalization, and public facilities	NJDCA	<a href="https://www.nj.gov/dca/divisions/dhcr/offices/neighborhood.html">https://www.nj.gov/dca/divisions/dhcr/offices/neighborhood.html</a>





Program	Description	Lead Agency	Website
Development Block Grants	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.		
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	<a href="https://www.njconservation.org/what-we-do/">https://www.njconservation.org/what-we-do/</a>
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. <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>	NJDEP	<a href="https://www.njib.gov/">https://www.njib.gov/</a>
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	<a href="https://www.state.nj.us/dep/watersupply/dws_loans.html">https://www.state.nj.us/dep/watersupply/dws_loans.html</a>



Program	Description	Lead Agency	Website
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 <a href="#">New Jersey Environmental Infrastructure Trust (Trust)</a> 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	<a href="https://www.nj.gov/dep/dwq/mface_njeifp.htm">https://www.nj.gov/dep/dwq/mface_njeifp.htm</a>
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	<a href="https://www.state.nj.us/transportation/business/localaid/funding.shtm">https://www.state.nj.us/transportation/business/localaid/funding.shtm</a>
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	<a href="https://www.state.nj.us/transportation/business/localaid/funding.shtm">https://www.state.nj.us/transportation/business/localaid/funding.shtm</a>
Local Aid and Economic Development	The Transportation Trust Fund and the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFE-TEA) legislation provide the opportunity for funding assistance to local government s for road, bridge, and other transportation projects. NJDOT has established a number of local aid programs that provide financial support to counties and municipalities for capital improvements to transportation infrastructure.	NJDOT	<a href="https://www.state.nj.us/transportation/business/localaid/">https://www.state.nj.us/transportation/business/localaid/</a>