

Appendix A

Plan Approvals

CERTIFIED RESOLUTION
ADOPTING THE “PREDISASTER MITIGATION STRATEGY DOCUMENT,
CONNECTICUT’S SOUTH WESTERN REGION”

WHEREAS: Floods, hurricanes, severe winter storms and other natural disasters can cause loss of human life and property in South Western Connecticut; and,

WHEREAS: Mitigation reduces or eliminates long-term risk to human life and property resulting from natural hazards; and,

WHEREAS: The *Predisaster Mitigation Strategy Document, Connecticut’s South Western Region* outlines strategies and action items that reduce the impact of natural disasters in the municipalities of Darien, Greenwich, New Canaan, Norwalk, Stamford, Weston, Westport and Wilton.

WHEREAS: The *Predisaster Mitigation Strategy Document, Connecticut’s South Western Region* has been prepared in accordance with FEMA requirements 44 C.F.R. 201.6 that a five year update of the adopted 2005 Pre-Disaster Mitigation Strategy Document be executed; and,

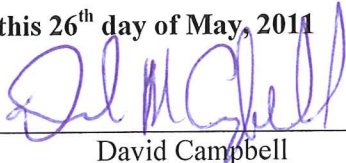
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WHEREAS: The *Predisaster Mitigation Strategy Document, Connecticut’s South Western Region* satisfies the mitigation planning requirements of the Disaster mitigation Act of 2000.

Now therefore, be it resolved, that the Chief Elected Officials of Darien, Greenwich, New Canaan, Norwalk, Stamford, Weston, Westport and Wilton, Connecticut hereby: Adopt the *Predisaster Mitigation Strategy Document, Connecticut’s South Western Region*, as approved by the Federal Emergency Management Agency (FEMA).

Adopted this 26th day of May, 2011

By:



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Michael Pavia
Mayor, Stamford

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First Selectman, Greenwich

Gayle Weinstein
First Selectwoman, Weston

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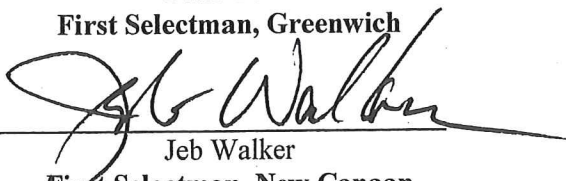
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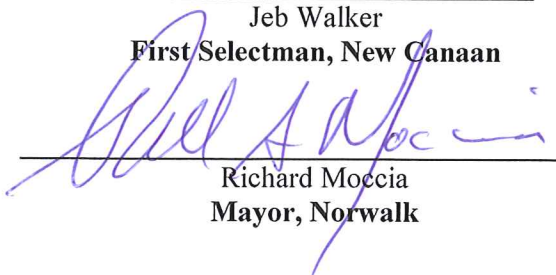
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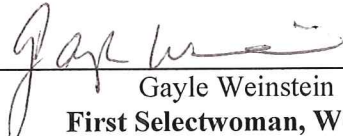
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South Western Regional Planning Agency
Stamford Government Center
888 Washington Boulevard, 3rd Floor
Stamford, Connecticut 06901
203 316 5190 Phone
203 316 4995 Fax
www.swrpa.org

CERTIFIED RESOLUTION
OF THE SOUTH WESTERN REGIONAL PLANNING AGENCY TO
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Adopted this 6 day of June, 2011

By: _____


Gerald Ellis
SWRPA, Chairman

Appendix B

Summary of 2005 Supporting Mitigation Strategies

Implement Activities Summary –

The following is a summary of the status of strategies recommended in the 2005 *Pre-Disaster Mitigation Strategy Connecticut's South Western Region* and additional mitigation projects completed, as of June 1, 2010.

Darien

Goal 1. *Reduce the loss of life and property and economic consequences as a result of flooding, high winds, severe winter storms and dam failure.*

Objective 1. Educate the public in the areas of natural disasters, mitigation activities and preparedness.

Supporting Tasks	Who	Status	Priority
1 Visit schools and educate children about the risks of floods and other natural hazards and how to prepare for them.	Police, Fire	Completed & Incorporated as a Regular Practice	High
2 Make available literature on natural disasters and preparedness at Darien Town Hall and at the Darien Library. <i>*All education materials and brochures developed by the town are made available at the town library</i>	Building, Library	Completed & Incorporated as a Regular Practice	High
3 Make available information on natural disasters and preparedness on Darien's website with links to state and federal resources.	OEM	Completed & Incorporated as a Regular Practice	High

Objective 2. Ensure proper functioning of critical facilities and reduce business disruptions as a result of floods.

Supporting Tasks	Who	Status	Priority
1 Investigate and plan for any necessary changes to the Darien Waste Water Treatment Facility to ensure sanitary conditions in the area during floods. <i>* Task removed by municipality – Darien does not have a Waste Water Treatment Facility, all waste is handled by the Stamford Water Pollution Control Authority.</i>	Public Works	Status Unreported	Medium
2 Replace drainage culvert under I-95 to handle peak storm flows and make any other necessary improvements downstream to prevent flooding in business districts.	Public Works, ConnDOT	<i>Funding is not currently available for a project of this magnitude</i>	Medium
3 Inspect and maintain drainage catch basins and systems to provide adequate and optimal flow.	Public Works	Completed & Incorporated as a Regular Practice	High

Additional Tasks Completed	Who	Status	Priority
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1	Town Completed a town wide watershed and drainage report	Public Works	Completed
2	After the floods of 2007 the Board of Selectmen formed the Flood Mitigation Committee which completed review of flooding in Darien for the first selectman for review.	Board of Selectmen	Completed
3	The Environmental Protection Committee was also designated to serve as the town's Flood and Erosion Control Board	Board of Selectmen	Completed
4	A Storm Water Management Plan was completed in 2008 that encompasses regulations for flood and erosion issues	Environmental Protection Commission	Completed

Objective 3. Ensure proper maintenance on Darien dams.

Supporting Tasks	Who	Status	Priority
Repair the sluice gates on the Gorhams Pond Dam.	Public Works	Completed	Medium

Objective 4. Improve the ability of Darien residents to prepare and respond to approaching severe weather.

Supporting Tasks	Who	Status	Priority
1 Implement a reverse 911 or Community Alert System that notifies Darien residents and business owners about approaching severe weather.	Police, Fire	Completed	High
2 Review and update Darien's GIS system with information on Natural Disasters that can be accessed for emergency as well as planning.	Planning & Zoning, OEM	Completed & Incorporated as a Regular Practice	High

Greenwich*Proposed Mitigation Strategies - Flood*

Goal. *To reduce the loss of life and property and economic consequences as a result of flooding.*

Objective 1. **Expand maintenance activities and execute specific projects that address known drainage issues within the municipality.**

Supporting Tasks	Who	Status	Priority
1 Carry out activities related to drainage and flooding in the DPW Capital Improvement Plan	Engineering	Activities to improve drainage and reduce flooding are underway, as of July 2010	Medium
2 Develop clean out schedules for all catch basins and drainage facilities	Highway	Completed & Incorporated as a Regular Practice	Medium
3 Update town Drainage Manual to include requirements for maintenance of drainage facilities for proposed development as called for and defined in P&Z regulations	Engineering, P&Z	Completed & Incorporated as a Regular Practice	Medium
4 Update town Drainage Manual to conform with CT DOT & CT DEP regulations for storm drainage	Engineering	Completed & Incorporated as a Regular Practice	Medium
5 Implement improvements described in the <i>Old Greenwich Business District and Surrounding Streets-Drainage Study</i>	Engineering	Improvements identified in the study are underway, as of July 2010	Medium
6 Implement drainage improvements between Old Field Point Road to Prospect Street	Engineering	Completed	Medium
7 Improve drainage systems in Bruce Park to reduce flooding issues	Parks and Recreation	Drainage improvements to Bruce Park are underway, as of July 2010	Low
8 Evaluate Binney Park storage shed to determine appropriate flood proofing method, such as raising its elevation	Parks and Recreation	As of July 2010 Greenwich was developing a strategy to flood proof the storage shed.	Low

9	Continue to review and investigate flood damage to structures with permit application and upon complaints	Building Insp.	Completed & Incorporated as a Regular Practice	High
Additional Tasks Completed		Who	Status	Priority
1	Drainage Studies by the Town:	DPW	Completed	Medium
	a. Church Street Area-Hydrologic and Hydraulic Study-October 10, 2008	DPW	Completed	Medium
	b. Strickland Brook-Drainage Evaluation Report-November 21, 2008			
	c. Old Greenwich-Drainage Evaluation Report-January 30, 2009	DPW	Completed	Medium
	d. Cider Mill Brook-Drainage Evaluation Report-March 23, 2009	DPW	Completed	Medium
	e. Horseneck Brook-Drainage Evaluation Report-April 1, 2010	DPW	Completed	Medium
	f. Mayfair Lane Area-Hydrologic and Hydraulic Study-April 27, 2009	DPW	Completed	Medium
	g. Pemberwick Park Area-Hydrologic and Hydraulic Study-April 27, 2009	DPW	Completed	Medium
	h. Brothers Brook-Drainage Evaluation Report-July 31, 2009	DPW	Completed	Medium
	i. Morningside Drive-Hydrologic and Hydraulic Study-September 21, 2009	DPW	Completed	Medium
	j. Pemberwick Road Area-Hydrologic and Hydraulic Study-September 21, 2009	DPW	Completed	Medium
2		DPW	Completed	Medium
	Pursuant to Results of Drainage Studies:		As of July 2010 Greenwich was working to design drainage improvements for the identified roadway and intend to begin construction as soon as funding is identified	
	a. Drainage Design for Church Street Area	DPW		Medium
	b. Design/Construction for Pemberwick Park Area	DPW		Medium
	c. Design/Construction for Pemberwick Road Area	DPW		Medium
3	Drainage Studies by the Town:			
	a. Byram River-Drainage Evaluation-Army Corps.	DPW	The Town is currently conducting drainage studies for (a) and (b) and plan to conduct the remaining studies as funding becomes available	High
	b. Coastal Area One-Drainage Evaluation Report	DPW		Medium
	c. Mianus River-Drainage Evaluation Report	DPW		Medium
	d. Coastal Area Two-Drainage Evaluation Report	DPW		Medium
	e. Coastal Area Three-Drainage Evaluation Report	DPW		Medium
Objective 2. Review use of town regulations to minimize the impacts of new development on man made and natural drainage systems and to insure development within flood zones is appropriate.				

Supporting Tasks	Who	Status	Priority
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Supporting Tasks	Who	Status	Priority
1 Recommend strengthening regulations to include requirements to maintain vegetation in riparian and flood prone areas	P&Z, IWWA	As of July 2010 the Town was working to revise existing regulation to include maintenance of vegetative buffer	Medium
2 Recommend strengthening regulations to include requirements to prevent mowing of tidal wetlands	P&Z, IWWA	As of July 2010 the Town was working to revise existing wetlands regulation	Medium
3 Review and make appropriate changes to regulations concerning impervious surface cover in flood prone areas	P&Z,	As of July 2010 an impervious surface coverage allowance was being explored by the Town	Medium
4 Review and modernize flood sections of the Building Zone Regulations and add standards for riverine flooding and taking into consideration the cumulative affect of development	P&Z	As of July 2010 an impervious surface coverage allowance was being explored by the Town	Medium
5 Study the use of V-Zone standards for foundation design in coastal A-Zones	P&Z, ZEO, Building Insp.	Completed & Incorporated as a Regular Practice	Medium

Objective 3. Petition FEMA to update the Flood Insurance Rate Maps and Floodway Maps.

Supporting Tasks	Who	Status	Priority
1 Request that FEMA and Army Corps of Engineers assist with the reevaluation of Flood Insurance Rate studies for riverine sections and remapping of Byram River south of Comly Terrace to Post Road	P&Z, ZEO	As of July 2010 the ACOE was conducting a reconnaissance study of the Byram River	Medium
2 Consider regulations to require that elevations be provided for development in A-Zones where no elevations have been determined on the FIRM maps	P&Z, ZEO	The Town of Greenwich was working to strengthen flood zone regulations as of July 2010	Medium

Objective 4. Improve and expand current flood warning systems and flood response procedures.

Supporting Tasks	Who	Status	Priority
1 Install Emergency Notification System (Reverse 911) to provide emergency information to residents in the entire town or in a specific geographic location within the Town. It is expected to be able connect to as many as 6,000 phones per minute. This notice will provide not only warning of impending situation by also info regarding how to prepare for particular situation	Emergency Operations Management (EOM)	Completed	High
2 Maintain and update all notification systems, and make sure warning equipment is immediately available	EOM, Police	Completed & Incorporated as a Regular Practice	High
3 Maintain available shelters and certification by the American Red Cross	EOM, Am Red Cross	Completed & Incorporated as a Regular Practice	Medium
4 Review and update memorandums of understanding as needed with Red Cross and transportation providers to make sure they meet the needs of the Town in the event of a flood event	EOM, Health	Completed & Incorporated as a Regular Practice	Medium
5 Continue to maintain and prepare vehicles to be used in the event evacuations are required during flooding	Police	Completed & Incorporated as a Regular Practice	Medium
6 Consider purchase of additional amphibious vehicles that can access flooded areas of town	Police	Completed	Medium
Additional Tasks Completed	Who	Status	Priority
7 Acquired USGS Stream Gauge Byram River	Conservation, Engineering	Completed	High
8 Maintenance of acquired USGS Stream Gauge Byram River	Conservation, Engineering	Completed & Incorporated as a Regular Practice	Medium

Proposed Mitigation Strategies - Severe Storms

Goal. *Reduce the risks of damage to private and public facilities caused by severe storms.*

Objective 1. **Continue and expand current maintenance activities, inspections, and requirements and education programs that reduce the vulnerability of existing and new development to severe storm damage.**

Supporting Tasks	Who	Status	Priority
1 Continue to review Erosion and Sedimentation Control Plans and ensure that controls are installed properly prior to any storm event	P&Z, Conservation, IWWA, Building Insp.	Completed & Incorporated as a Regular Practice for each project	Medium

Supporting Tasks	Who	Status	Priority
2 Create clean out schedules for all catch basins and drainage facilities	Highway	Completed & Incorporated as a Regular Practice	Medium
3 Update town Drainage Manual to include requirements for maintenance of drainage facilities for proposed private development as called for and defined in P&Z regulations	Engineering, P&Z	Completed & Incorporated as a Regular Practice	Medium
4 Update town Drainage Manual to conform with CT DOT & CT DEP regulations for storm drainage	Engineering	Completed & Incorporated as a Regular Practice	Medium
5 Continue process of reviewing plans to ensure compliance with snow and wind load requirements	Building Insp.	Completed & Incorporated as a Regular Practice	High
6 Update identified snow emergency routes for DPW sand/salt and plow operations	DPW-Hwy	Completed & Incorporated as a Regular Practice	Medium
7 Formalize procedure to educate residents on proper tree planting techniques, including choosing the species, location, and installation method correctly to ensure that trees will withstand wind and snow loads	Conservation, P&Z	As of July 2010 the town was working to develop a variety of educational materials	Low
8 Consider requiring legal documents Drainage Maintenance Agreements for private developments	P&Z, Law	Completed & Incorporated as a Regular Practice	Medium
9 Upgrade certain pump stations with generators, including pump station at Ridge Avenue	Aquarion Water Co.	As of July 2010 Aquarion was in the process of installing back up power sources at all facilities and pump stations	Medium
10 Consider upgrading back up power at all facilities, including upgrading Putnam Reservoir for generator power of entire facility	Aquarion Water Co.	As of July 2010 Aquarion was in the process of installing back up power sources at all facilities and pump stations	Medium

Objective 2. Continue and expand activities related to severe storm warning and emergency preparedness.

Supporting Tasks	Who	Status	Priority
1 Install Emergency Notification System (Reverse 911) to provide emergency information to residents in the entire town or in a specific geographic location within the Town. It is expected to be able connect to as many as 6,000 phones per minute. This notice will provide not only warning of impending situation by also info regarding how to prepare for particular situation	EOM	In Progress	High
2 Maintain and upgrade (as necessary) the notifications systems that would be used to notify residents of impending situation	EOM, Police	Completed & Incorporated as a Regular Practice	High
3 Continue practice of monitoring of weather updates	DPW-Hwy,	Completed & Incorporated as a Regular Practice	Medium
4 Print and distribute the resident's preparedness booklet, reproduce and update as necessary	EOM, Police, EMS		High
5 Maintain available shelters and certification by the American Red Cross	EOM, Am Red Cross	Completed	Medium
6 Review and update memorandums of understanding as needed with Red Cross and transportation providers to make sure they meet the needs of the Town in the event of a flood event	EOM, Health	Completed & Incorporated as a Regular Practice	Medium
7 Review and update mutual aid agreements with surrounding municipalities for fire services	Fire	Mutual Aid agreements are regularly reviewed by the Town	Medium

Objective 3. Improve and expand current severe storm response capabilities.

Supporting Tasks	Who	Status	Priority
1 Obtain generators for Indian Field DPW Facility to ensure use of critical radio and fueling functions during power outages	DPW-Hwy	Completed	Medium
2 Create bunk room and kitchen facility at Indian Field DPW Facility so DPW workers may get necessary rest as required by law during long duration and frequent storm events	DPW- Hwy	Completed	Medium
3 Consider establishing additional sand and salt sheds in northern Greenwich so DPW trucks do not have to drive back to southern parts of Town to reload	DPW	As of July 2010 the Town was evaluating possible locations for additional salt storage	Low
4 Continue program of obtaining new and up-to-date equipment for snow removal and sand/salt operations	DPW-Hwy & Fleet Dept	New snow removal is acquired as needed or as funding permits	Medium

Proposed Mitigation Strategies - Dam Safety

Goal. *To reduce the loss of life and property as a result of dam failure.*

Objective 1. **Improve and expand current dam failure warning systems.**

Supporting Tasks	Who	Status	Priority
1 Maintain and provide to GIS information to locate and estimate the number of properties and structures in proximity to areas that could be affected by dam failures	EOM, Aquarion Water Co.	Completed	Medium
2 Install Emergency Notification System (Reverse 911) to provide emergency information to residents in the entire town or in a specific geographic location within the Town.	EOM, Police	Completed	Medium
3 Clarification of the notification policies between Aquarion Water Company and the Town will enhance warning times for nearby residents in the event of a dam failure	EOM, Police, Fire, Selectmen	Completed & Incorporated as a Regular Practice	Medium

Objective 2. **Ensure proper maintenance of town-owned dams and private dams.**

Supporting Tasks	Who	Status	Priority
1 Continue to maintain records and inspect Town owned dams only	Engineering, CT DEP	Completed & Incorporated as a Regular Practice	Medium
2 Continue to maintain records and inspect dams owned by private dam owners	CT DEP	Completed & Incorporated as a Regular Practice	Medium
3 Continue to update Dam Safety Plans and Emergency Operation Programs for private dam owners	CT DEP	As of July 2010 Greenwich was working with several property owners to develop a process to update Dam safety plans. Work will continue to update and maintain dam safety plans for registered dams	Medium

Proposed Mitigation Strategies – Drought

Goal. Implement and expand drought mitigation plans and initiatives.

Objective 1. Update Drought Management Plan and review and update regulations as necessary.

Supporting Tasks	Who	Status	Priority
1 Study effectiveness of regulations during drought conditions	Conservation, Health, Aquarion Water Co.	The Town has implemented a drought ordinance and will evaluate the effectiveness of the ordinance my monitoring enforcement over time	Medium
2 Review USGS groundwater study and make recommendations for regulations to protect groundwater quality and quantity	Conservation	The Town has been working with USGS and the state to evaluate available ground water and to have private wells included in the state drought plan	Medium
3 Work with Aquarion Water Co. on infrastructure in town and inter-town	Cons, Aquarion Water Co.	The Town has been working with Aquarion to evaluate and coordinate and reduce demands on the public water supply during dry weather periods	Medium
4 Update drought management plan to be in alignment with State of Connecticut Drought Management plan.	Con., Aquarion Water Co.	The Town of Greenwich is actively involved efforts to update the state drought management plan	High
5 Identify which dry hydrants work in drought conditions and which do not. Evaluate which hydrants may need to be deeper and areas where more hydrants need to be installed	Fire, Conservation	The Town continues to monitor hydrants ability to function during dry weather conditions, and implement appropriate strategies to maintain function as necessary	Medium

Supporting Tasks	Who	Status	Priority
6 Consider if underground storage tanks for fire protection need to be required for new development	P&Z, Conservation, Fire	The Town continues to monitor hydrants ability to function during dry weather conditions, and implement appropriate strategies to maintain function as necessary	Medium
7 Review winter drought restrictions and conservation measures, and evaluate possible education and outreach programs that may be helpful	Aquarion Water Co., Conservation	The Town is continually monitoring the potential need to enact winter drought restrictions and is working on developing educational materials promoting water conservation year round	Low

Objective 2. Educate the public through additional outreach and notification processes.

Supporting Tasks	Who	Status	Priority
1 Continue outreach programs encouraging water conservation	Conservation, Health, Aquarion Water Co.	The Town has continued to work to provide educational materials to residents promoting water conservation year round	Medium
2 Develop and continue programs to educate the public on measures to take during winter drought conditions	Conservation, Aquarion Water Co.	The Town is continually monitoring the potential need to enact winter drought restrictions and is working on developing educational materials promoting water conservation year round	Medium
3 Maintain Emergency Operation Plan and specific information needed to respond to drought conditions	EOM, Cons, Health	The Towns Emergency Operations Plan is regularly reviewed and updated as necessary	Medium

New Canaan

Proposed Mitigation Strategies

Goal 1. *To reduce the loss of life and property and economic consequences as a result of natural disasters.*

Objective 1. To reduce the likelihood of flooding by improving existing natural and artificial drainage systems.

Supporting Tasks	Who	Status	Priority
1 Dredge Mill Pond in order to restore its flood attenuation capacity on the Five Mile River.	Engineering	Completed	High
2 Dredge Mead Park Pond in order to restore its flood attenuation capacity on the Noroton River.	Engineering	Bid Documents are being prepared. Dredging is expected to begin late 2010	High
3 Procure silt removal equipment to assist Public Works in keeping up to date with the removal of silt from the Town's storm drain catch basin system.	Public Works	Completed	Medium

Objective 2. Reduce business disruption in New Canaan's town center as a result of natural disasters.

Supporting Tasks	Who	Status	Priority
1 Repave an area for the deposit of snow removal from the commercial area.	Public Works	Completed	Medium

Objective 3. Reduce the amount of debris from severe storms through preventive tree maintenance.

Supporting Tasks	Who	Status	Priority
1 Budget appropriate money necessary to maintain and remove dead, dying, dangerous or diseased trees.	Public Works	Completed & Incorporated as a Regular Practice	Medium

Objective 4. Improve and expand current natural hazard emergency response capabilities.

Supporting Tasks	Who	Status	Priority
1 Replace the fire horn atop the Fire Department at 60 Main Street.	Police, Fire	In Progress	Medium
2 Implement a reverse 911 or similar system to alert residents of natural phenomenon and if necessary, evacuation procedures.	Police, Fire	Completed & Incorporated as a Regular Practice	Medium
3 Develop a GIS application to assist Town personnel in the event of an emergency or natural disaster.	Police, Fire	Completed & Incorporated as a Regular Practice	Medium
4 Develop a strategy and obtain the necessary equipment to provide adequate heat at emergency shelters.	Police, Fire	Each Town facility currently has a back-up generator. larger	Medium

Supporting Tasks	Who	Status	Priority
5 Obtain additional cots and bedding adequate to serve the emergency shelters in the event of an emergency or natural disaster.	Police, Fire	generators are being pursued Completed	Medium

Objective 5. Whenever practical, incorporate natural hazard mitigation strategies into existing municipal projects.

Supporting Tasks	Who	Status	Priority
1 Review plans that fulfill DEP Storm Water Management, Phase II requirements and identify projects that may be eligible for FEMA natural hazard mitigation grants.	Wetlands	Completed	Medium

Norwalk

Goal 1. *Reduce the loss of life and property and economic consequences as a result of flooding, high winds, severe winter storms and dam failure.*

Objective 1. **Improve the ability of Norwalk emergency responders to prepare and respond to severe weather and other natural emergencies.**

Supporting Tasks	Who	Status	Priority
1 Implement an emergency telephone notification system that allows the municipality to alert various segments of the population depending on the nature of the emergency.	Public Safety	Completed	High
2 Complete the Emergency Operations Center, equipment and man with trained personnel.	Public Safety	A Temporary Emergency Operations Center has been set up for use by the City, until construction is completed on the New Emergency Operations Head Quarters, which will include a state of the art EOC	High
3 Integrate the traffic signal and camera systems with the GIS and Emergency Operations *	Public Safety	<i>Explored, not possible at this time. Feeds from 13 traffic cameras can easily be fed to Combined Dispatch via the MAN – but not currently being accessed in CD. Traffic signals are located in the GIS but changes in signal timing and/or operation do not automatically reflect in the GIS. Nor is there connection into the EOC of either signals or cameras.</i>	High
4 Move the automated Norwalk River warning system (the ALERT system) to new EOC and integrate with GIS.	Public Safety	<i>Explored, not possible with current State owned infrastructure due to age and incompatibility with GIS</i>	High
5 Equip first-responders with pocket personal computers with software that will communicate with the City's GIS and include a fire hazard inventory program.	Public Safety	Personal Computers and GPS systems are being purchased incrementally as funding permits	High
6 Identify special-needs populations for various hazards.	Public Safety	Completed	Medium

Supporting Tasks	Who	Status	Priority
7 Identify and prepare and/or update site specific emergency evacuation plans for critical facilities such as Norwalk Hospital, King Industries, Merritt 7, Norden Place office park and other significant complexes as well as the gas pipeline.	Public Safety	Completed & Incorporated as a Regular Practice	Medium
8 Pursue “StormReady” designation by the National Weather Service.	Public Safety	Completed	Low

Objective 2. Improve the ability of Norwalk Department of Public Works to prepare and respond to severe weather and other natural emergencies.

Supporting Tasks	Who	Status	Priority
1 Add natural hazards information to the annual DPW day, web site and the public access channel.	DPW	Completed & Incorporated as a Regular Practice	High
2 Integrate the traffic signal and camera systems with the GIS and Emergency Operations.	DPW	<i>Explored, but not possible at this time (see # 3 above)</i>	High
3 Install roadway weather sensors at key locations. *Note: Mobile units used	DPW	Completed	Medium
4 Perform hazard analysis at WWTP/DPW center to identify areas of concern.	DPW	Completed & Incorporated as a Regular Practice	Medium
5 Provide back-up generators at critical sewage pump stations.	DPW	Completed	Medium
6 Investigate need for salt/sand shed in the northern section of Norwalk. *	DPW	Removed by City, No longer a town priority	Low

Objective 3. Whenever practical, incorporate natural hazard mitigation strategies into existing City projects.

Supporting Tasks	Who	Status	Priority
1 Expand maintenance activities such as more frequent catch basin, storm drainage facilities and channel cleaning.	DPW	Completed & Incorporated as a Regular Practice	High
2 Identify projects in the <i>Norwalk Harbor Management Plan</i> for projects that may be eligible for FEMA natural hazard mitigation grants.	Harbor Commission	Completed & Incorporated as a Regular Practice	Medium
3 Identify projects in the <i>Norwalk Plan of Development</i> for projects that may be eligible for FEMA natural hazard mitigation grants.	P&Z	Completed & Incorporated as a Regular Practice	Medium

Supporting Tasks	Who	Status	Priority
4 Request capital improvement funds for drainage and flooding problems throughout the City such as Calf Pasture Beach area, Keeler Brook area, Indian River, Mary Austin Place, Water Street, Fitch Street, Connecticut Avenue and Scribner Avenue	DPW	<i>Significant flood reduction has been accomplished over the past few years. Most significant remaining areas present special challenges require state effort/ approval, etc.</i>	Medium

Objective 4. Reduce the likelihood and potential loss of life and property as a result of dam failure.

Supporting Tasks	Who	Status	Priority
1 Upgrade the flood spillway of the Browns and Grupes Reservoir Dams.	First District Water Department	The Water Department has completed mapping and initial design and working to secure funding to complete the upgrade.	High
2 Update maps illustrating the inundation zones.	First District Water Department	Completed	Medium

Objective 5. ~~Improve the ability of all City departments to maintain continuity of service in the event of an emergency by implementing the National Fire Protection Association (NFPA) 1600, a national standard for emergency preparedness.~~

** The City has decided not to participate in the NFPA 1600 program*

Supporting Tasks	Who	Status	Priority
4 Familiarize all City departments and agencies with NFPA 1600 and its requirements.	Entire City	Removed by City	High
2 Identify budgetary impacts of compliance with NFPA 1600.	Entire City	Removed by City	High
3 Council adoption of NFPA 1600.	Council	Removed by City	High
4 City wide compliance with NFPA 1600.	Entire City	Removed by Town	High

Objective 6. Reduce the amount of debris from severe storms through preventive tree maintenance.

Supporting Tasks	Who	Status	Priority
1 Encourage more citizen participation to inventory and identify condition of street trees and integrate with City's GIS to optimize tree maintenance activities.	DPW	Completed & Incorporated as a Regular Practice	Medium

Additional task under taken by the City of Norwalk since 2005

- Adopt the recommendations of the Fire Study Committee regarding the Volk Station
- Fire hydrants in Cranbury and West Norwalk have been updated improving water delivery to meet the needs of the community
- Evaluate municipalities sheltering and evacuation needs for a variety of storm scenarios, and work local and faith-based organizations to provide services and outreach to vulnerable populations

Stamford

Goal 1. *To reduce the loss of life and property and economic consequences as a result of natural disasters.*

Objective 1. Whenever practical, incorporate natural hazard mitigation strategies into existing City projects.

Supporting Tasks	Who	Status	Priority
1 Review the Mill River Corridor Project and identify projects that may be eligible for FEMA natural hazard mitigation grants.	Land Use Bureau, Grants Office	Completed	Medium
2 Identify potential natural hazard mitigation projects during the development of the master plan for Mianus River Park.	Land Use Bureau	Completed	Low
3 Incorporate natural hazard awareness, mitigation activities and preparedness into public outreach efforts.	Health Department	Completed & Incorporated as a Regular Practice	Low

Objective 2. Reduce costs associated with providing emergency and other public services in the event of a natural disaster.

Supporting Tasks	Who	Status	Priority
1 Develop protocols for responding to hurricanes and severe storms.	Public Safety	Completed	High
2 Acquire snow melting machines to melt excess snow from severe winter storms.	Operations	<i>This is something the city would like to pursue, but it is expensive and funds are not currently available.</i>	Medium
3 Acquire the site at 128 Magee Avenue as a staging area for excess snow, large wood waste and uniformed services.	Operations	<i>This is something the city would like to pursue, but it is expensive and funds are not currently available</i>	Medium
4 Upgrade all of the City's plows with liquid spreaders. The City has upgraded all <u>new</u> plows with liquid spreaders.	Operations	In Progress	Medium
5 Hold an annual meeting among the various departments that may need to respond to natural disasters. The purpose of the meeting would be to share information, coordinate, and discuss and/or create protocols. The Emergency Operations Center would take the lead.	Public Safety	Completed & Incorporated as a Regular Practice	Medium

Additional Tasks	Who	Status	Priority
1 The City installed a "Reverse 911" system January 2009.	Tech Management Services	Completed	
2 The Fire and Police Departments acquired a \$13 million Motorola radio system June 2008 that	Tech	Completed	

	provides superior “in-building” and “out-of-building” coverage. This system has dramatically improved communication between emergency responders	Management Services	
3	A new back-up Emergency Operations Center (EOC), consisting of a 911 system and emergency responders, is currently in final test phase at Sterling Farms Golf Course.	Tech Management Services	As of July 2010 the City construction was underway at the locations of the backup EOC, which is expected to be complete early in 2011 Completed
4	The Health Department with the Red Cross completed a shelter plan that includes a map of shelters and mass vaccination/medical supply distribution sites, with flood plains, critical facilities and vulnerable populations identified	Health Department, Red Cross	
5	“Be Prepared Stamford” website (www.bepreparedstamford), was launched, with a link on the City’s home page. The site gives information on being prepared for and responding to a disaster, includes fact sheets on various hazards, and provides public health information.	Health Department	Completed

Objective 3. Reduce the likelihood of floods.

Supporting Tasks		Who	Status	Priority
1	Repair seawalls at the south end of Noroton River on Weed Avenue between Matthews Street and Cove Road.	Engineering	<i>This was done in 2000, due to limited resources the city does not plan on addressing these at this time.</i>	Medium
2	Repair seawalls on the section of Holly Pond between Mathew Street and East Main Street.	Engineering	<i>This cannot be done until the dredging of Holly Pond takes place.</i>	Low
3	Dredge the section of Holly Pond between Mathew Street and East Main Street.	Engineering	<i>The dredging costs from \$12-16 million, and the funds are not in place.</i>	Low
4	Address drainage problems at the I-95 overpasses (between I-95 and Metro North train lines) located at Atlantic Street, Canal Street, and Elm Street.	Engineering	<i>There is currently a feasibility study being done.</i>	High
Additional Tasks		Who	Status	Priority
1	Removal of the Mill River Dam and the Pulaski St Dam	Mill River Collaborative, ACOE, City	Completed	
2	Four properties within the Mill River floodplain were acquired by the city to be maintained as open space	Mill River Collaborative	Completed	
3	The City has officially accepted the former vehicular bridge on West Main Street as a pedestrian bridge, and it will be rebuilt as a pedestrian only bridge (and emergency vehicles) above the 100-year flood plain. In addition, eight of the nine piers will be removed and the elevation of the bridge deck raised. Design for the renovation will begin in late 2010	City of Stamford	As of July 2010 the City has acquired the Bridge and project design is expected to begin in late 2010, with the project	

completed as funding
allows

Objective 4. Reduce the frequency and severity of power outages and road closures as a result of wind and ice storm events.

Supporting Tasks	Who	Status	Priority
1 Increase the amount of preventative tree maintenance.	Parks	Completed & Incorporated as a Regular Practice	Medium
2 Acquire tree management software linked to GIS to optimize tree maintenance activities.	Parks	<i>Funding not currently available, other options are being explored (i.e. FEMA Pre-Disaster Mitigation grant money or regional collaboration)</i>	Medium
3 Develop a long-term plan to bury power lines in existing development.	Operations	<i>There are no plans currently to develop a plan due to expense associated with relocation utilities underground.</i>	Medium

City of Stamford Land Use Regulations - Flooding

1. All new construction and substantial improvements of residential and non-residential structures within a special flood hazard area must have the lowest floor (including basement) elevated to or above the minimum elevation standard. The minimum elevation standard is the base flood plus one foot of freeboard. With regard to non-residential structures, utility and sanitary facilities, they may be constructed below the minimum elevation standard if they substantially resist hydrostatic and hydrodynamic loads and the effects of buoyancy.
2. The use of fill for structural support is prohibited in coastal high hazard areas.
3. All substantial improvements within the Special Flood Hazard Areas (SFHA) must comply with SFHA building requirements. Substantial improvement means any combination of repairs, reconstruction, alteration, or improvements to a structure, taking place during a five year period, the cumulative cost of which equals or exceeds 50% of the market value of the structure as determined at the beginning of such five year period.
4. Low density zoning standards are in effect in many flood-prone districts of Stamford.
5. All critical use facilities, including substantial improvements, are prohibited within the special flood hazard area unless elevated (residential structures) or elevated and/or dry flood proofed (non-residential structures) to or above the level of the 500-year floodplain. They must also be located and constructed so that they are safely accessed and evacuated at any time during the base flood.
6. All development, including fill, new construction, substantial improvements, and manufactured home placement is prohibited unless an applicant provides written certification from a professional engineer registered in the State of Connecticut that no significant increase in the base flood will result. Under no circumstances may the increase in the base flood height exceed one-tenth of one foot (0.1 foot). In the case of the floodway, any development that would result in any increase in flood levels is prohibited. In A zones where base flood elevations have been determined, but before a floodway is designated, no new construction, substantial improvement, or other development (including fill) is permitted which will increase base flood elevations more than one-tenth of one foot (0.1 foot) at any point along the watercourse when all anticipated development is considered cumulatively with the proposed development. In addition, if any portion of a watercourse is altered or relocated, the flood carrying capacity must be maintained.
7. For all new construction and substantial improvements, new and replacement sanitary sewage systems must be designed to minimize or eliminate infiltration of flood waters in the systems, and discharges from the systems to flood waters. On-site waste disposal systems must be located and constructed to avoid impairment to them during flooding. In no case will a component of a septic system be situated within the area subject to inundation by a 25-year frequency flood.
8. All new or substantially improved structures and facilities including underground storage facilities that will be used for the production or storage of any material or substance defined as a "Dangerous Material" are prohibited in any Regulatory Floodway or any Coastal High Hazard Area. All such structures in the Special Flood Hazard Area must be elevated to or above the level of the 500-year floodplain and designed to prevent pollution in the course of the 500-year flood.
9. Anyone pursuing a zoning permit within the coastal flood hazard zone must sign a Declaration of Notice of Conditions Affecting Property. A portion of this document states that the owner can never convert fully enclosed areas below the minimum elevation standard of 14 feet National Geodetic Vertical Datum into living space. If the property owner violates this agreement, then the Environmental Protection Board and/or the Zoning Enforcement Officer can take legal action, while the owner will be responsible for any legal fees incurred.
10. Stamford conforms to all state building codes addressing disaster mitigation.

11. The site plan submittal process requires a grading plan, a stormwater management report, a sanitary sewage handling report, an erosion control plan, and all construction details with associated specifications where applicable.
12. The discharge of stormwater associated with industrial activities requires a permit issued by the CT DEP Bureau of Water Management.
13. Standard Drainage Facilities Maintenance Agreement (filed with land records with the property deed) is filled out whenever a private developer builds any drainage system-pipes, street drains, detention facilities, infiltrators/dry well, and so forth. The agreement requires regular inspection and cleaning of all components, and repair and replacement of components as needed to ensure the proper functioning of the drainage system.
14. The subdivision regulations require that, to the extent practicable, on-site retention of increased stormwater runoff must be accommodated.
15. No activity that results in the cumulative disturbance of more than 10,000 square feet of land area shall be permitted unless a "Soil Erosion and Sediment Control Plan" is submitted.
16. Stamford maintains FEMA elevation certificates for all buildings in the SFHA in accordance with Zoning Regulation 7.1 E. 7. a., effective 7/93 - the FIRM date is 1/16/81. Stamford has also maintained flood elevation certificates for miscellaneous buildings in the SFHA built after 1/1981 and before 1993.
17. The Stamford Environmental Protection Board through its Inland Wetlands & Watercourses regulations maintains riparian buffer setbacks of 25' or 100', depending on the watershed.
18. The Engineering Bureau requires no net increases in stormwater run-off within each watershed when reviewing development proposals.
19. To the extent feasible, existing natural features which are of ecological value to the city, such as wetlands, water courses, water bodies, rock formations, stands of trees, views and vistas, and similar irreplaceable assets, shall be preserved.
20. The Environmental Protection Board, through its Inland Wetlands and Watercourses regulations, works toward the conservation of wetland resources through avoiding impacts from development on functional wetlands and watercourses. The Board also seeks to restore and enhance wetlands that have been degraded.

Weston

Goal: *To reduce the loss of life and property and economic consequences as a result of natural emergencies (flooding, high winds, severe winter storms and dam failure).*

Objective 1: Whenever practical, incorporate natural hazard mitigation strategies into existing City projects.

Supporting Tasks	Who	Status	Priority
1 Use the Governmental Access Channel to inform the Weston public about how to prepare and respond to hazards and emergencies and to encourage residents to be prepared to help others in need.	Police	Completed	Medium
2 Identify open space projects that may be eligible for FEMA natural hazard mitigation grants.	P&Z	Completed	High
3 Publish all Town Ordinances on the Town website including those that mitigate natural hazards. <i>*All town ordinances are posted online, at this time ordinances pertaining to mitigation are not listed separately.</i>	Selectmen	Completed & Incorporated as a Regular Practice	Medium

Objective 2: Continue and expand current maintenance activities, inspections, and requirements.

Supporting Tasks	Who	Status	Priority
1 Budget appropriate money necessary to maintain and remove dead, dying, dangerous or diseased trees in rights-of-way and on other Town land.	Selectman and Public Works	Completed	High
2 Ensure that tree maintenance is being performed along private roads.	Public Works	Completed & Incorporated as a Regular Practice	High
3 Develop a GIS application to assist personnel in the event of an emergency or natural disaster.	Police	<i>*The Town is currently exploring procurement of GIS software. The purchase has been deferred due to budgetary constraints.</i>	Low
4 Adopt house-numbering ordinance for fire and EMS service.	Selectman and Police	Completed	Medium

Objective 3: Continue and expand activities related to natural hazard warning and emergency preparedness.

Supporting Tasks	Who	Status	Priority
1 Ensure that the emergency shelters have adequate supplies to respond to natural emergencies.	Police	Completed	Medium
2 Maintain emergency generators and infrastructure.	Police	Completed & Incorporated as a Regular Practice	Medium
3 Work with Aquarion to assure the proper functioning of their regional water distributions plan without encouraging development to sprawl beyond the ability of Weston's Emergency Services System to function safely and promptly with excellent communications.	Police and Aquarion	Completed	Low
4 Review and implement recommendations to ensure seamless emergency contact throughout Weston with a sound link to other emergency responders in the Region.	Police	Completed	High
5 Implement a reverse 911 system that allows the town to alert various segments of the population depending on the nature of the emergency.	Police	Completed	High
6 Investigate the effectiveness of repairing the siren warning system, which is already installed but currently not operable.	Police	Completed	Medium

Westport

Proposed Mitigation Strategies - Flooding

Goal 1. *Reduce the loss of life and property as a result of floods.*

Objective 1. Educate the public in the areas of storm damage potential, mitigation activities and preparedness.

Supporting Tasks	Who	Status	Priority
1 Adopt a Natural Hazards Awareness Week complete with public outreach activities focused on flooding and other natural hazards.	OEM	Completed & Incorporated as a Regular Practice	Medium
2 During the Natural Hazards Awareness Week, conduct an annual workshop so that residents, business owners, insurance and real estate agents, and all interested parties can familiarize themselves with functions of a floodplain, the laws governing development in a floodplain, mitigation alternatives, and precautions necessary for living in flood prone areas.	OEM, P&Z	Completed & Incorporated as a Regular Practice	Medium

Objective 2. Westport will endeavor to support increased awareness and purchases of flood insurance.

Supporting Tasks	Who	Status	Priority
1 Make necessary changes to the Floodplain Zoning Regulations so that all insured residents can be eligible for the additional mitigation coverage (coverage for increased cost of compliance with flood regulations). <i>*Since 2005 Westport increased the number of active NFIP policies from 950 to 1290</i>	P&Z, CT DEP	Completed & Incorporated as a Regular Practice	High

Objective 3. Increase Westport's CRS rating to further reduce flood insurance premiums.

Supporting Tasks	Who	Status	Priority
1 During annual review, identify with ISO specialist, CRS activities that could be done to achieve a higher ranking.	P&Z	Completed & Incorporated as a Regular Practice	High

Objective 4. Petition FEMA to update the Flood Insurance Rate Maps and Floodway Maps.

Supporting Tasks	Who	Status	Priority
1 Provide FEMA with data demonstrating the need to revise the outdated FIRM map panels.	P&Z DPW	Completed & Incorporated as a Regular Practice	High

Objective 5. Acquire flood-prone properties and those which provide valuable recreational opportunities, and flood storage potential and benefit the greatest number of Westport residents.

Supporting Tasks	Who	Status	Priority
1 Review the <i>Westport Plan of Conservation and Development</i> and other relevant plans to identify open space projects that preserve or restore the functions of natural systems and may be eligible for funding under mitigation grants.	Conservation P&Z	Completed & Incorporated as a Regular Practice	Medium

Objective 6. Use town regulations and ordinances to minimize the impacts of new development on the natural drainage system and to ensure appropriate development occurs in floodplains.

Supporting Tasks	Who	Status	Priority
1 Regularly review subdivision regulations and make appropriate changes to encourage alternatives to placing lots in flood prone areas and to minimize impermeable ground coverings, if necessary.	P&Z	Completed & Incorporated as a Regular Practice	Medium
2 Regularly review subdivision regulations and make appropriate changes that place further limitations on areas of impermeable surfaces in new subdivision developments in flood prone areas.	P&Z	Completed & Incorporated as a Regular Practice	Medium
3 Review the existing Waterway Protection Line ordinance and consider amendments that place the responsibility for stream channel maintenance on the property owner and give Westport enforcement power. Such ordinances would include stream dumping, channel maintenance, and land clearing disturbances. These ordinances would reduce the likelihood of localized flooding and could lead to additional points toward CRS reclassification.	Conservation Engineering	Westport has reviewed and revised the existing ordinance and is currently working to have the revised ordinance adopted. Due to local opposition adoption has been delayed.	Medium

Objective 7. Expand maintenance activities and execute specific projects that alleviate riverine related flooding in addition to the restoration and improvement of natural floodplain and wetland areas.

Supporting Tasks	Who	Status	Priority
1 Westport will encourage the Aspetuck Land Trust to initiate a maintenance program for Sasco Creek as it passes through their property, in an attempt to foster an understanding that maintaining a clear channel in the northern section of the parcel will reduce flooding occurrences on Gristmill Lane. If necessary, Westport can pursue clearing rights on this parcel using provisions of the state drainage statutes.	DPW, Conservation, Aspetuck Land Trust	<i>No action has been taken to date and the priority has been changed to low by the town due to cost and lack of available funding.</i>	High
2 To address the danger of ice jams on certain areas of Pussy Willow Creek, Westport will encourage private property owners in the potentially troubled areas to properly maintain the stream channel. If necessary, Westport can pursue clearing rights on these parcels using provisions of the state drainage statutes. *	Conservation, DPW	<i>No action has been taken to date and the priority has been changed to low by the town due to cost and lack of available funding.</i>	Medium

Objective 8. Mitigate against flood damage by undertaking cost effective structural projects.

Supporting Tasks	Who	Status	Priority
1 Complete the recommended upgrades to the Westport Water Pollution Control Facility.	Public Works Water Pollution Control Authority	Completed	Medium

Objective 9. Improve and expand current flood warning systems and flood response procedures.

Supporting Tasks	Who	Status	Priority
1 Identify funding sources and install additional staff gauges for smaller streams, including (but not limited to) Sasco Creek, Muddy Brook and Upper Willow Brook.	OEM	<i>*No funding sources have been identified. The Town will continue to work to find funding.</i>	Medium
2 Prepare a Flood Response Plan to work in conjunction with the Westport Emergency Operations Plan. The purpose of the plan is to outline the town response to flood conditions and incorporate the strategies presented in this pre-disaster mitigation plan.	OEM	Completed & Incorporated as a Regular Practice	High
3 Pursue mutual aid agreements with such organizations as the American Red Cross to provide volunteer labor during flooding to fill sand bags and assist with other response activities.	OEM	Completed	High

Supporting Tasks	Who	Status	Priority
4 Investigate and pursue the purchase of an automated sand bagger.	OEM	<i>*priority has been lowered to medium, the purchase will be considered as funds allow.</i>	Medium
5 Investigate and seek financial support from the Downtown Merchants Association and similar civic organizations.	OEM	Removed by the town	High
6 Install a reverse 911 or similar system that alerts residents and business owners about approaching severe weather and for evacuations when necessary.	OEM	Completed	High

Proposed Mitigation Strategies -Severe Storms

Goal 1. *Educate the public in the areas of wind damage potential, mitigation activities and preparedness.*

Objectives: Provide education opportunities to the affected community, builders, developers and town officials so that future construction and landscaping associated with construction is designed to minimize wind damage and retrofitting of existing structures and maintenance of property are implemented to the benefit of public safety and property loss reduction.

Ensure clear and concise severe weather alerts reach 100% of the population in Westport.

Ensure power and communication capabilities are adequately improved for at risk citizens. The loss of electronics and perishable food items during severe storm events is minimized for seniors and the disabled.

Minimize property loss/damage and personal safety risk due to falling tree damage following a severe storm event.

Supporting Tasks	Who	Status	Priority
1 During the Natural Hazards Awareness Week conduct an annual workshop so that local building contractors, residents, business owners, insurance and real estate agents, and all interested parties can familiarize themselves with wind associated risks, retrofitting techniques, importance of evacuation, and the understanding of warning mechanisms used by Westport.	Fire, Building	Completed & Incorporated as a Regular Practice	Medium
2 Establish a “Severe Weather Awareness” week in March and a “Winter Weather Awareness” week in October. Disseminate information prepared by the Connecticut State Emergency Management Office during these events.	OEM, Building, First Selectman	Completed & Incorporated as a Regular Practice	Medium
3 Promote the use of functional shutters for properties located along the coast to guard against window breakage which can result in structural failure. Investigate funding sources to promote this relatively inexpensive type of retrofitting on a large scale.	OEM, Building	Completed & Incorporated as a Regular Practice	Medium

Supporting Tasks	Who	Status	Priority
4 Encourage the Westport Garden Club, the Beautification Committee and the Tree Board to sponsor events that educate the public about wise landscaping techniques, locating trees away from utilities and wind resistant tree species.	Public Works, Conservation	Completed & Incorporated as a Regular Practice	High
5 Implement improved severe weather forecasting and warning systems.	OEM	Completed	High
6 Provide a reliable emergency wireless communication system for use by the elderly and disabled in the event of a storm event.	OEM, Human Services, Westport/We ston Health District	Completed & Incorporated as a Regular Practice	Low
7 Purchase additional portable generators.	OEM, DPW	Completed	Medium
8 Distribute literature to the general public educating them on proper tree planting techniques.	OEM, DPW, Parks, Conservation	Completed & Incorporated as a Regular Practice	High

Goals 2. *Reduce the risk of damage to utility infrastructure in Westport as a result a severe storm event.*

Objectives: Ensure falling trees or branches do not damage utility lines during a severe storm event.

Ensure improvement of emergency power and communication capabilities during a severe storm event.

Keep drainage paths open

Limit damage to utility lines and property and injury or loss of life by fallen trees, tree limbs, and brush.

Supporting Tasks	Who	Status	Priority
1 Determine how to reuse disposed brush within the community to reduce costs of exporting from Westport (chips, firewood, composting).	Public Works	Completed & Incorporated as a Regular Practice	Medium
2 Move as many utility lines as possible underground.	P&Z, DPW	Completed & Incorporated as a Regular Practice	Low

Supporting Tasks	Who	Status	Priority
3 Place deflectors on key utility lines that are more likely to accumulate ice or snow.	Utility Companies	Completed & Incorporated as a Regular Practice	Medium
4 Prohibit tree planting in and around utility lines.	DPW	Completed & Incorporated as a Regular Practice	High
5 Continue tree trimming and maintenance program for trees on public roads.	Public Works, Utility Companies	Completed & Incorporated as a Regular Practice	High
6 Establish protocols to check drainage paths (i.e. catch basins and culverts) prior to a severe storm.	Public Works	Completed & Incorporated as a Regular Practice	Medium

Goal 3. *Broaden response capabilities of emergency forces in dealing with the preparation and aftermath of a severe storm event.*

Objectives: Ensure there are damage assessment capabilities for emergency response personnel following a severe storm event.

Ensure municipal facilities are adequately supplied and equipment is in proper working order.

Improve and expand current severe weather warning systems.

Improve and expand response capabilities that serve the disabled, elderly, and vulnerable population groups.

Supporting Tasks	Who	Status	Priority
1 Incorporate notification of severe weather events in a reverse 911 or similar system.	OEM	Completed	High
2 Train emergency response personnel to assess damage to buildings and their electrical, plumbing and heating systems.	Police/Fire	Completed & Incorporated as a Regular Practice	Medium
3 Review the Emergency Operating Plan and emergency protocols to ensure that emergency responders can perform critical duties in the event of an extended power outage, limited fuel access, and reduced communication capabilities.	OEM/EOC Departments*	Completed & Incorporated as a Regular Practice	Medium

Supporting Tasks	Who	Status	Priority
4 Perform regular inspections of cones, barricades, sandbags, salt, portable power generators, bunk trailers to ensure that they are adequate and in good repair in the event of a severe storm.	Police/Fire, DPW	Completed & Incorporated as a Regular Practice	High
5 Develop a program that can identify the location and specific physical assistance required during a severe storm event for disabled and senior citizens.	Fire, Health District, Human Services	Completed	Medium

*EOC (Emergency Operations Center) Departments include: Fire, Police, EMS, Human Services, Health, Finance and Town Clerk.

Goal 4. *Reduce losses to public and private structures in Westport from severe storm events.*

Objectives: Ensure that all local residential and commercial building codes reference the most current standards in regards to wind damage protection.

Ensure existing buildings and historically significant buildings are inventoried to identify potential losses from severe storm events.

Encourage implementation of preventive measures for existing development to reduce the vulnerability to severe weather damage.

Ensure mobile homes and mobile home parks throughout Westport are inventoried to identify potential for losses from severe storm events.

Ensure that critical facilities are protected against wind damage.

Supporting Tasks	Who	Status	Priority
1 Implement specific physical actions that help protect critical facilities against wind damage.	Police/Fire, Building, Public Works	Completed & Incorporated as a Regular Practice	Medium
2 Encourage private marinas and yacht clubs to develop management plans that address pollution prevention and hazard mitigation.	Police/Fire, Conservation, P&Z	Completed & Incorporated as a Regular Practice	Medium
3 Review local building codes to make sure they reference the most current standards in regards to wind damage protection.	Building	Completed & Incorporated as a Regular Practice	High

Supporting Tasks	Who	Status	Priority
4 Identify historic and architecturally significant buildings as well as critical facilities that could suffer damage.	P&Z, Building	Completed	Medium
5 Provide information to contractors and owners of mobile homes on ways to anchor their structures to minimize damage from severe storms.	Building, Westport Housing Authority	Completed & Incorporated as a Regular Practice	High
6 Initiate storm alerts earlier to allow citizens more time to prepare their structures for severe storm events.	OEM	Completed & Incorporated as a Regular Practice	High

Proposed Mitigation Strategies - Severe Winter Storms

Goal 1. *Reduce risk of damage to utility infrastructure in Westport as a severe winter storm.*

Objectives: Improve emergency power and communication capabilities during a severe winter storm.

Ensure utility lines are protected from ice storm related damage.

Ensure falling trees during a severe storm event does not damage utility lines.

Supporting Tasks	Who	Status	Priority
1 Move as many utility lines as possible underground.	P&Z	Completed & Incorporated as a Regular Practice	Low
2 Place deflectors on key utility lines that are more likely to accumulate ice or snow.	private utilities	Completed & Incorporated as a Regular Practice	Medium
3 Prohibit tree planting in and around utility lines.	P&Z, DPW	Completed & Incorporated as a Regular Practice	High
4 Keep utility corridors free from potential damaging trees.	P&Z, DPW	Completed & Incorporated as a Regular Practice	High
5 Continue tree trimming and maintenance program for trees on public roads.	Public Works, Utility Company	Completed & Incorporated as a Regular Practice	High

Goal 2. *Educate the public about severe winter storms, potential impacts, mitigation activities and preparedness.*

Objectives: Ensure that clear and concise severe winter storm information reaches 100% of the population in Westport.

Reduce health and safety risk to citizens regarding driving in winter conditions.

Educate the public as to downed utility hazards.

Supporting Tasks	Who	Status	Priority
1 Educate the public about the meaning of National Weather Service announcements, such as winter storm watch, winter storm warning, ice storm warning, heavy snow warning, blizzard warning, severe blizzard warning and high wind warning.	OEM	Completed & Incorporated as a Regular Practice	High
2 Identify areas within the municipality that are the most vulnerable to severe winter storms.	OEM, Public Works	<i>Removed by Town due to similar vulnerability throughout Westport</i>	Medium
3 Advise people of the dangers of driving in icy road conditions, and warn them that doing so can be a risk to their lives. Produce a series of announcements on what to do if you are trapped in your car during a severe winter storm.	Police/Fire	Completed & Incorporated as a Regular Practice	Medium
4 Publish a special section in the local newspaper with emergency information about severe winter storms. The publications should emphasize emergency procedures when caught out in the open or in a vehicle during a severe winter storm.	OEM	Completed & Incorporated as a Regular Practice	High
5 Provide educational pamphlets in regards to damaged utilities.	Police/Fire, Utility Company	Completed & Incorporated as a Regular Practice	High

Goal 3. *Broaden response capabilities in the event of a severe winter storm.***Objectives: Ensure municipal facilities are adequately supplied and important equipment is in proper working order.**

Supporting Tasks	Who	Status	Priority
1 Incorporate notification of severe winter storm events in a reverse 911 or similar system.	OEM	Completed	Medium
2 Review Emergency Operating Plan and emergency protocols to ensure that emergency responders can perform critical duties in the event of an extended power outage, limited fuel access and reduced communication capabilities.	Police/Fire	Completed & Incorporated as a Regular Practice	Medium
3 Perform regular inspections of cones, barricades, sandbags, salt, portable power generators, bunk trailers to ensure they are adequate and in good repair in the event of a severe winter storm.	Police/Fire, DPW	Completed & Incorporated as a Regular Practice	Medium

Proposed Mitigation Strategies - Earthquake**Goal 1 *To reduce loss of life and property as a result of earthquakes.*****Objective 1. Educate the public about the threat of earthquakes.**

Supporting Tasks	Who	Status	Priority
1 During the Natural Hazards Awareness Week discussed on page 26, include activities, workshops and materials about earthquakes.	OEM, Building	Completed & Incorporated as a Regular Practice	Medium
2 During the Natural Hazards Awareness Week, educate residents, business owners, insurance and real estate agents, and all interested parties on the history of earthquakes in Connecticut and the risk of such events in Westport.	OEM, Building	Completed & Incorporated as a Regular Practice	Medium
3 Send one or more representatives of the Westport Building Department to FEMA's Emergency Management Institute class on Rapid Visual Screening Techniques, designed to teach skills necessary for inventorying earthquake susceptible commercial buildings. Skills acquired by attending this course could be utilized in subsequent actions outlined below.	Building, OEM	Completed & Incorporated as a Regular Practice	Low
4 Provide the earthquake-related publications to the public library for inclusion with the other natural hazard publications.	Building, Library	Completed & Incorporated as a Regular Practice	Medium

Objective 2. Assess the vulnerability of critical facilities to earthquakes.

Supporting Tasks	Who	Status	Priority
1 Request that the Town, including the Board of Education, if applicable, retain the services of a professional engineer to survey all municipally owned buildings for their ability to withstand earthquake and wind loading. Prioritize any retrofitting, giving those buildings to be used as shelters the highest priority. If analysis reveals that a particular building is better suited as a shelter than one that is currently being used, then consider relocating the shelter to that location.	OEM, Building	Completed & Incorporated as a Regular Practice	Low
2 Recommend that a professional engineer assist the Mediplex Facility and the Hall Brook Hospital with assessing their facilities for their ability withstand earthquake and wind loading. Alone, or potentially in a joint effort with neighboring communities, Westport will request that the State OEM help to bring the one-day Emergency Management Institute course: "Non-Structural Earthquake Hazard Mitigation for Hospitals and Other Health Care Facilities" to Westport, or another location in Fairfield County.	OEM, Building, Health District	Completed & Incorporated as a Regular Practice	Low

Objective 3. Ensure that future construction of critical facilities is scrutinized more than other developments to determine the suitability of locations in the event of earthquakes.

Supporting Tasks	Who	Status	Priority
1 Zoning regulations and other ordinances and municipal laws governing the siting of new development, (new subdivisions of more than 10 houses), will be examined to determine if site geology is properly considered in the siting of critical use facilities. If deficiencies are identified, necessary changes will be studied and incorporated into the review of proposals for the development of such facilities. *	P&Z, Building, DPW	<i>Not yet completed due to other town priorities and limited staff resources. Intended to be considered when related plans are reviewed or revised.</i>	Low

Objective 4. Ensure that emergency responders can communicate and respond effectively in the event of an earthquake.

Supporting Tasks	Who	Status	Priority
1 Replace the police department communication tower with one that can withstand the forces of an earthquake.	OEM, Building	Completed	Medium
2 Update the Westport Emergency Operations Plan to address earthquakes.	OEM	Completed & Incorporated as a Regular Practice	Medium

Proposed Mitigation Strategies- Dam Safety

Goal 1. *To reduce the loss of life and property as a result of dam failure.*

Objective 1. Help private dam owners obtain financial assistance for dam repairs.

Supporting Tasks	Who	Status	Priority
1 Seek outside funding sources for repair of the Bulkley Pond Dam on Sasco Creek.	Public Works	<i>The current dam owner does not wish to pursue the project at this time.</i>	Low

Objective 2. Improve and expand current dam failure warning systems.

Supporting Tasks	Who	Status	Priority
1 Install warning gauges.	DPW	Completed & Incorporated as a Regular Practice	Medium
2 Incorporate notification of dam failure in a reverse 911 or similar system.	OEM	Completed & Incorporated as a Regular Practice	

Other Previously Implemented and Regular Practice Mitigation Activities

Pre-1997 Hazard Mitigation Plan Strategies

1. On an as-needed basis, permitted beach nourishment projects are conducted.
2. Westport regulations help protect wetlands and upland ponds that attenuate peak flood flows through storage.
3. In 1975, the town commissioned Leonard Jackson and Associates to prepare a flood and erosion control study. This study focused on eight major streams within the town and identified several problem areas. In 1995, town officials applied for US Army Corps of Engineers (USACE) permits to replace culverts, remove sediments, and widen the channel on sections of the Silver Brook at Lyons Plain Road, Bonnie Brook Lane, Pony Lane and Brooklawn Drive. In addition, the town replaced three culverts on Stony Brook increasing water passage capacity to meet the 100-year flood event; replaced a collapsed culvert on New Creek at Beachside Avenue; replaced a culvert and improved the channel on New Creek at Taylor Lane; completed channel improvements on sections of Muddy Brook and its West Parish Tributary; and completed channel improvements on Silver Brook. All of these completed projects resulted in decreased flooding potential for nearby properties.
4. The 1995 *Repetitive Loss Plan* was developed as part of Westport's participation in the CRS. This plan outlined eighteen proposed actions to reduce or eliminate flood damage, and many of the activities have been completed. Furthermore, the repetitive loss plan increased mitigation awareness within the community and helped achieve a town-wide reduction in flood insurance premium costs for residents. Westport is currently ranked in Class 8 of the CRS Program.

5. Westport conducts ongoing inspections of the neighborhoods in which the repetitive loss properties are located. The purpose of the inspections is to determine if potential flood damage could be facility related, rather than tidal. The inspections include viewing of drainage facilities for clogging and tide-gates for proper functioning.
6. The Westport Zoning Regulations were changed to simplify the approval process for applicants who desire to elevate their structure to mitigate future flood damage. The amendments allow the applicant to bypass the full public hearing review provided that the structure is being elevated without any increase in building footprint.
7. Each year, the Public Works Department budgets specific stream improvement projects such as culvert installation, stream clearing, and on-going maintenance operations. Westport is committed to continuing to support and implement stream improvement projects and to foster a cooperative and shared vision between the Flood and Erosion Control Board and the Conservation Commission.
8. In the *1987 Plan of Conservation and Development*, fifteen properties were identified for potential acquisition. Of these properties, thirteen were either located near rivers, streams, or coastal areas, contained significant wetlands, or were subject to flooding. Two parcels were purchased, and four parcels were protected through conservation easements or deed restrictions.
9. Westport mails a brochure to all occupants of FEMA-designated 100 year floodplain properties including those in the repetitive loss areas. The brochure focuses on flood loss reduction and public safety measures.
10. The Emergency Management Office, working in conjunction with the Westport/Weston Chapter of the American Red Cross, continues to provide public outreach services to citizens. Door-to-door campaigns are conducted before and during hurricane season which provide flood preparedness information.
11. Westport improved its record keeping responsibilities under the NFIP by labeling individual property files in the Planning and Zoning Department for repetitive flood loss properties. This labeling immediately alerts staff issuing permits that all floodplain related regulations apply to those structures. A list of all flood prone structures in Westport has also been prepared.
12. Following the June 1992 floods in Connecticut, the town was awarded money to elevate seven homes in the Compo Beach neighborhood through the Hazard Mitigation Grant Program (HMGP). The Compo Beach elevation project has been regarded by the state DEP as one of the most successful projects in the state under the HMGP. When improvements to homes in flood hazard areas exceed fifty percent of the value of the building (exclusive of land value) the building must be raised to the 100-year flood elevation.
13. Homes have been raised to the 100-year flood elevation through FEMA mitigation grants. In addition, over 100 homes primarily in the repetitive loss areas have been elevated through current floodplain regulations.
14. Westport installed sixteen gauges/signs at various locations throughout town that provide elevations above sea level from the ground up to twelve or sixteen feet above sea level. The signs indicate areas of town that would be inundated by category I, II, and III hurricanes. When a coastal storm is expected, a resident can listen to the National Weather Service Forecast, which will issue a coastal storm warning with a tide height. The resident can then compare that number to the reading on a nearby sign and take appropriate measures. With this information, residents can move vehicles and other belongings to higher ground and make evacuation plans early when they know their homes or evacuation routes will be affected. Although installation of the signs will not provide protection to structures and fixed objects, they will allow residents to take steps to protect their safety and movable possessions.
15. Westport has an early warning system in its coastal areas, which consists of several loud speakers mounted on utility poles. The system is tested monthly. The early warning system, combined with information from flood warning forecasts and the elevations from the above described signs, assist residents in making informed decisions regarding evacuations during storm events.

1997 Hazard Mitigation Plan Accomplishments.

1. The Town visits schools and educate children about the risks of floods and other natural hazards and how to prepare for them.
2. The annual public outreach projects, which previously covered the repetitive loss properties, were expanded to all properties in the entire community. The corresponding brochure outlines the risks of flood prone areas, mitigation and preparedness strategies, and contacts. The brochure is mailed out with Tax Collector's yearly mailing or through a separate mailing, if necessary.
3. A relationship was established with the Downtown Merchant's Association to educate interested merchants in flood proofing techniques and strategies for flood prone commercial properties in the retail district. Using Project Impact funding, an audit of individual businesses was conducted by the National Resource Conservation Service. Elevations of the structures were determined and recommendations for flood proofing measures such as door stop flood barrier inserts and similar retrofitting measures were provided to each of the participating businesses.
4. A meeting was organized with Westport insurance agents and the NFIP representatives from FEMA's insurance contractors to educate the agents on the program.
5. The Westport/Weston Health District, in cooperation with the American Red Cross, the Westport Housing Authority, the Department of Human Services and the local Visiting Nurse agencies developed a list of residents needing additional services and support during emergencies. The list is updated twice a year and identifies residents in flood prone areas.
6. Information on the availability of flood insurance was incorporated into all of its hazard related public education workshops.
7. FEMA flood insurance brochures were made available at public accessible places such as the Town Clerk's office or the Planning and Zoning Department offices and public library.
8. All CRS reporting requirements were satisfied to ensure continued program participation. The town continued to implement activities outlined in the *1995 Repetitive Loss Plan*.
9. Westport received credit point in the CRS for adopting the *1997 Hazard Mitigation Plan*.
10. Westport received credit point in the CRS for eligible activities that were implemented as a result of the *1997 Hazard Mitigation Plan*. In 2000, Westport was elevated from a Class 9 to a Class 8 Community.
11. The town continued to petition FEMA to review the Town's Flood Insurance Rate Maps and revise, if appropriate.
12. FEMA was provided with additional data to demonstrate the need to revise the FIRM.
13. The *1997 Westport Plan of Conservation and Development* updated the list of desired public open space acquisitions. Properties with flood storage and other demonstrable mitigation benefits were targeted as they were in 1987. Two properties on the acquisition list were purchased. A third property, not on the list but located wholly within the 100-year floodplain, was purchased. The structure on it was demolished using HMGP funds, and the property became protected open space.
14. New funding sources were identified for open space acquisition.
15. House elevating projects were expanded to include frequently flooded riverine areas.
16. Public projects were reviewed for their eligibility for funding under FEMA grant programs.

17. Potential matching funds for FEMA grants were investigated including capital budgeting for mitigation matching funds and other grant program funds.
18. The Floodplain Management section of the Planning and Zoning regulations were reviewed with the assistance of the State NFIP Coordinator's office to ensure continued compliance with the NFIP standards and to identify possible areas where the regulations could be made more protective without overburdening property owners. The Town continued to aggressively enforce existing NFIP regulations.
19. The subdivision regulations were reviewed and appropriate changes were made to encourage alternatives to placing lots in flood prone areas and to minimize impermeable ground coverings.
20. The Floodplain Zoning Regulations were modified so that all insured residents are eligible for the additional mitigation coverage. Department of Environmental Protection (DEP) provided model language.
21. Model subdivision regulations were reviewed for their ability to limit the amount of impermeable surfaces in proposed subdivisions located in flood prone areas. After the review, appropriate changes were made to the Westport Subdivision Regulations.
22. Performance standards were incorporated into subdivision reviews to include additional protective measures such as enlarged buffer areas around tidal wetlands and watercourses.
23. Annual inspections are conducted in flood prone areas (particularly neighborhoods in which the Repetitive Loss Properties are located) that are legally accessible to town officials. The purpose of the inspections is to determine if potential flood damage could be facility related, rather than tidal. For instance, catch basins and culverts are checked for clogs and tide gates are checked for proper functioning.
24. The Town utilized Intermodal Surface Transportation Efficiency Act (ISTEA) grant funds to complete a roadway Stormwater Pollution Mitigation project. This project included the identification and ultimate retrofitting and annual cleaning of designated catch basins to improve water quality and allow for more efficient processing of floodwaters. This activity supplemented Westport's ongoing efforts of cleaning catch basins.
25. In 2000, Westport completed stream maintenance on Silver Brook. The Town replaced four culverts, cleaned and reconfigured the channel, and dredged four ponds to ensure the waterway can accommodate a 100-year storm event.
26. The Westport Water Pollution Control Facility (WPCF) is located just outside the 100-year floodplain. It is powered by emergency generators that will provide power in case of an emergency. Connecticut Light and Power (CL&P) has recently upgraded the service to the WPCF and the new WPCF will also provide for additional emergency power.
27. The parking lot at the Westport Train Station and Ferry Lane were raised above flood levels using ISTEA Grant funding. This project greatly reduced the number of motor vehicles flooded when Long Island Sound backs up into the Saugatuck River.
28. At the intersection of Morningside Drive South and Muddy Brook, Westport replaced a culvert and sized it to accommodate 100-year storm to reduce the frequency of flooding. In addition, a warning system was installed to alert motorists of flood conditions.
29. The town investigated locations and necessary labor involvement for the pre-event stockpiling of sand bags for use in the flood prone downtown areas.
30. Westport has a part time tree warden and an as-needed program for tree trimming.
31. The Public Works Department has the necessary equipment to clean up downed tree limbs and brush following major wind events.
32. Westport has two Weather Radio Specific Area Message Encoder (WRSAME) radios located in the police station on Jessup Road and the Emergency Management office on Post Road East. These radios are used in conjunction with the speaker warning system in coastal areas to warn residents of coming severe weather and for evacuations when necessary.

33. Westport continued to visit schools and educate children about the risks of wind events and other natural hazards and how to prepare for them.
34. The Town acquired information on wind construction techniques (such as hurricane straps) and non-structural mitigation measures from FEMA, Building Officials & Code Administrators International Inc., and the CT DEP. This information was made available to all building permit applicants and incorporated into the natural hazards reduction information in the town library.
35. The Westport/Weston Health District, in cooperation with the American Red Cross, the Westport Housing Authority, the Department of Human Services and the local Visiting Nurse agencies continued to maintain a list of residents needing additional services and support during emergencies.
36. Proposed subdivision and commercial projects are subject to the landscaping standards of the Westport Zoning and Subdivision Regulations.
37. Utility lines are required to be buried for new subdivisions and are encouraged for certain projects such as major road projects.
38. Brush disposal procedures were developed to deal with debris after wind storms. Staging areas were identified for short term storage. An agreement was reached with Sherwood Island State Park for temporary storage and processing after a major storm event.
39. A local plan was developed for annual tree trimming at municipal-owned properties. The plan encourages the Town to coordinate with Northeast Utilities on tree trimming activities.
40. The Town and the Board of Education performed engineering surveys on school buildings that are used for shelters and recommend any necessary improvements. In addition, all municipally owned buildings were surveyed for their ability to withstand earthquake and wind loading. Retrofitting was prioritized for those buildings used as emergency shelters. If any particular building was determined better suited as a shelter than an existing one, then the Town considered relocating the existing shelter to the new location.
41. Commercial building owners or managers (of buildings with large population clusters) were encouraged to prepare a hazard mitigation plan in addition to their emergency response plans.
42. The town coordinated with the state OEM and DEP to locate NOAA weather radios in commercial buildings with large population clusters. The building managers were educated on the proper use of the radios.
43. Funding sources were identified for the installation of back-up power generators in all buildings that have been identified as shelters in the EOP.
44. The Town continued with the Housing Authority practice of acquiring mobile manufactured housing units in the Sasco Creek Village Trailer Park. The Town continued to bring those units into compliance with building code standards for anchoring to reduce wind damage. Trailers were replaced with slab construction town houses.
45. The Town received grant funding to proactively retrofit the above trailers without having to wait for the town to acquire the property.
46. Longshore Marina enrolled in State Clean Marina Program and applied for Audubon Cooperative Sanctuary Program.
47. A marina management plan was implemented to address pollution prevention and hazard mitigation for the town-owned Compo Cove Marina. Private marinas and yacht clubs received copies of the Plan and were encouraged to develop their own plans. Literature and technical assistance are available from the state DEP Office of Long Island Sound Programs and from FEMA.

48. Westport staff regularly visits schools (as is currently done under fire prevention) and educate children about the risk of earthquakes (and other natural disasters) and how to prepare for them.
 49. The following two FEMA publications were made available to all design professionals, builders and others who are issued permits for new construction: "The Home Builder's Guide for Earthquake Design" and "Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide" (FEMA - 74, 1994).
 50. All commercial, industrial, and institutional property owners were provided with copies of the FEMA publication entitled "Emergency Management Guide for Business and Industry" (FEMA - 141, October 1993). Spare copies were made available in the Emergency Management Office.
 51. The Westport/Weston Health District, in cooperation with the American Red Cross, the Westport Housing Authority, the Department of Human Services and the Office of Emergency Management continued to develop a neighborhood buddy system for neighbors to assist neighbors needing additional services and support during emergencies.
- Westport inventoried privately and institutionally held commercial buildings in excess of two stories and provided facility managers with copies of the appropriate FEMA. publications.

1999 Project Impact Accomplishments

Using the \$500,000 grant awarded to Westport by FEMA in 1999 under the Project Impact initiative, the following flood reducing and preparedness projects were accomplished:

1. Conduction of flood audits and preparation of Elevation Certificates for commercial properties in the 100-year flood zone.
2. Conduction of flood audits and preparation of Elevation Certificates for properties located in the Repetitive Loss Areas in town.
3. Sluice gate replacement on Lees Pond dam on the Saugatuck River.
4. Analysis and preparation of plans for repair of Bulkley Pond dam on Sasco Creek.
5. Funding of engineering study of the Compo Beach neighborhood which included stormwater management, drainage and storm surge protection mitigation measures. This study served as the basis for non-funded work performed by the town which included re-establishment of an existing berm along Grey's Creek and its extension along Compo Marina to the entrance of Compo Beach Park. The berm protects the area from low level storms. The study also served as the basis for major drainage improvement work that included installation of pumps, pump station, retrofitting of catch basins and new trunk lines in the Compo Basin neighborhood. These efforts will help mitigate flood impacts from low level storms and provide clean up after large storm events.
6. Purchase of HAZUS and EIS/GEM Software/Workstation for emergency operations center.
7. Purchase of shelter supplies
8. Purchase of GIS equipment, hiring of consultant and aerial flyover of the town to better evaluate high hazard areas.

Wilton**Proposed Mitigation Strategies**

Goal 1. *Reduce the loss of life and property and economic consequences as a result of flooding, high winds, severe winter storms and dam failure.*

Objective 1 Improve the ability of Wilton residents to prepare and respond to approaching severe weather.

Supporting Tasks	Who	Status	Priority
1 Implement a reverse 911 system that allows the town to alert various segments of the population depending on the nature of the emergency. <i>*The town has implemented and using the Code Red System</i>	Wilton Dispatch	Completed	High
2 Implement a community alert system to fill the gap between the National Emergency Alert system and community-based emergencies.	Police, Fire	Completed	Medium
3 Acquire emergency generators for the Town Hall.	Police, Fire	Completed	Medium
4 Provide cots, blankets, food supplies, etc for emergency shelters.	Police, Fire	Completed	Medium
5 Install radio repeater sites for fourth (interoperable) public safety channel.	Wilton Dispatch	Completed	Medium
6 Develop a GIS application to assist personnel in the event of an emergency or natural disaster.	Police, Fire	Completed & Incorporated as a Regular Practice	Medium
7 Upgrade and provide ongoing training for the ALERT system.	Police, Fire	<i>The Town opted not to implement the ALERT system</i>	Low

Objective 2. Reduce the amount of debris from severe storms through preventive tree maintenance.

Supporting Tasks	Who	Status	Priority
1 Budget appropriate money necessary to maintain and remove dead, dying, dangerous or diseased trees in rights-of-way and on other town land.	Public Works	Completed & Incorporated as a Regular Practice	Low
2 Seek financial assistance to manage tree debris in the Norwalk River.	Public Works	Completed & Incorporated as a Regular Practice	Low

Appendix C

Evaluation of the 2010 Proposed Mitigation Recommendations

Proposed mitigation supporting recommendations were evaluated and prioritized based on the following criteria:

- Does the supporting recommendation mitigate multiple natural hazards?
A score of 1 indicates “Yes”, a score of 0 indicates “No,” while a 0.5 indicates that the recommendation may be implemented in a manner to address multiple hazards.
- Is the supporting recommendation feasible?
Determined if the supporting recommendation had the political and public support necessary to be carried out, and if current staff resources were available for implementation of the recommendation. A score of 1 indicates “Yes”, a score of 0 indicates “No,” while a 0.5 indicates that the feasibility of implementation depend on a number of factors not know at this time.
- Would the supporting recommendation be effective in avoiding or reducing future losses?
Effectiveness was determines based on how effective the recommendation would be in reducing losses if properly implemented and maintained. A score of 1 indicates “Yes”, a score of 0 indicates “No,” while a 0.5 indicates that the if effectiveness was dependant on the municipalities ability to properly maintain of carry out the recommendation after initial implementation, based on public support and staff resources.
- Does the supporting recommendation improve upon existing programs or support other municipal priorities?
A score of 1 indicates a municipal program exists and the supporting recommendation would help to enhance or support the program, a score of 0 indicates no municipal program currently exists,” while a 0.5 indicates no municipal program exists, but the recommendations could be incorporated into an existing program.
- Does the cost of the supporting recommendation seem reasonable for the size of the problem and likely benefits?
Determined if the benefits associated with the recommendation is proportional to the cost of implementation and maintenance. A score of 1 indicates “Yes”, a score of 0 indicates “No,” while a 0.5 indicates that the costs are dependant on a number of factors not known at this time.
- Does the supporting recommendation does the strategy contribute to continued compliance with NFIP?
A score of 1 indicates the supporting recommendation contributes to or enhances municipal compliance with NFIP; a score of 0 indicates compliance is neither enhanced nor violated;” while a 0.5 indicates that compliance may be enhance based on how the recommendation is implemented; and a “– “ indicates the supporting recommendation does not directly address flooding and has no bearing on NFIP.
- The anticipated time frame for implementation of the supporting recommendation.
A score of 1 was assigned to projects expected to be implemented in 1-2 years from plan adoption; while a 0.5 was assigned to projects expected to be implemented within 3-4 years of plan adoption; and a 0 was assigned to projects expected to be implemented more than 4 years after plan adoption or as funding becomes available (pending available funding and staff resources). The time frame for implementation was counted twice, to ensure the Plan system accurately identified community priorities

The actual criteria utilized varied slightly by municipality. The following table shows which criteria were utilized by each municipality, the scoring methodology used and how priorities were established. Although a numeric schema was used to set priorities. The final priority rating was reviewed by each municipality, and where the results differed from municipal priorities the priority ranking was changed.

Darien Mitigation Strategies

Goal *Reduce the loss of life and property and economic consequences as a result of flooding, high winds, severe winter storms and dam failure.*

Objective 1. *♦ Educate the public in the areas of natural disasters, mitigation activities and preparedness.*

Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? 1 = Yes, 0.5 = May be hazards 0 = No	Is the supporting task feasible? 1 = Yes, 0.5 = possibly, 0 = no	Would the supporting task be effective in avoiding or reducing future losses? 1 = Yes, 0.5 = Possibly, 0 = No	Is there an established program already in place to implement the proposed task? 1 = Yes, 0.5 = May be incorporated into an existing program, 0 = No	Does the proposed task require lengthy permitting and approval processes (an answer of "No" satisfies this criterion)? 1 = Yes, 0.5 = may depending on specific actions or locations, 0 = Yes	Does the cost seem reasonable for the size of the problem and likely benefits? 1 = Yes, 0.5 = Possibly, 0 = No	Does the task aid in the ability of Darien to warn its townspeople about approaching severe weather or other hazards? 1 = Yes, 0.5 = Possibly, 0 = No	The anticipated time frame for implementation. H:(1) 1-2yrs, M:(.5)3-4 yrs, L:(0)4+ yrs, weighted (x2)	Total*	Priority*
1. Enhance Community preparedness programs.	1	1	0.5	0.5	1	0.5	1	0.5	6.5	Medium
• Explore developing a "phased approach" to citizen preparedness (i.e. introductory brochures identifying simple and inexpensive tasks, and more advanced brochures with additional tasks and actions to be done to prepare you family and home for a natural disaster that may be more sophisticated in nature or more expensive).	1	0.5	0.5	0.5	1	0.5	1	0.5	6	Medium
• Provide "welcome kits" to new home owners for properties located within the flood plain, or with a significant risk of flooding.	1	0.5	0.5	0	1	0	1	0	4	Low
2. Develop a series of additional brochures promoting 'best management practices' for natural resources targeted to homeowners. Mail these brochures to all Darien homeowners annually, in concert with other mailings and provide materials on the town website. Topics to be covered in the brochures include:	0.5	0.5	0.5	1	1	0.5	1	0	5	Low
• Sound landscaping practices and stormwater management	0.5	0.5	0.5	0	1	0.5	1	0	4	Low
• How to protect wetlands	0.5	0.5	0.5	0	1	0.5	1	0	4	Low
• Understanding tidal wetlands	0.5	0.5	0.5	0	1	0.5	1	0	4	Low

Objective 2. *♦ Ensure proper functioning of critical facilities and reduce business disruptions as a result of Natural Hazards.*

Supporting Recommendation										
1. Inventory condition of town and owned culverts and bridges.	0	0.5	1	1	1	0.5	0	0.5	5	Medium
2. Encourage the study of alternative systems for delivering reliable power to residents.	1	0.5	0.5	0	0.5	0	0	0	2.5	Low
3. Encourage wherever possible the under-grounding of all utilities to minimize service disruptions due to inclement weather. Require all new development and subdivisions to install underground utilities.	1	0.5	0.5	1	0.5	0.5	0	0.5	5	Medium
4. Work with CTDOT and DEP to maintain flow of streams through expansive wetlands.	1	0	1	0.5	0	0.5	0	0.5	4	Low
5. Continue to incorporate recommendations from the Stony Brook Watershed Study.	0	1	1	1	0.5	0.5	0	0.5	5	Medium
6. Consider conducting drainage and watershed evaluations for the remaining waterbodies in the town.	0	1	0.5	1	1	0.5	0	0.5	5	Medium
7. Support activities and policies that preserve the quantity and quality of drinking-water aquifers and protect primary and secondary aquifer recharge areas.	0	1	0.5	1	0.5	1	0	0.5	5	Medium
8. Replace or repair culverts or bridges as needed.	0	1	1	1	0	1	0	0.5	5	Medium

9.	Bridges and roadways over navigable waterways should be maintained, operated, repaired, built to avoid or reduce potential for any significant adverse impacts on navigation, safety, environmental quality.	0	1	1	1	0	1	0	0.5	4.5	Medium
10.	Review and consider new regulations of DEP on stormwater retention including the use of rain gardens.	0	0.5	0.5	0.5	0.5	0.5	0	0.5	3.5	Low
11.	Maintenance of an emergency operations center or equipment to sustain critical facilities in the event of a disaster (i.e. obtain additional generators).	1	1	1	1	1	1	1	1	9	High
12.	Assess vulnerability of critical facilities to earthquakes, hurricanes, tornadoes and flooding.	0	1	1	0.5	1	1	0	0.5	5.5	Medium
13.	Evaluate the town's sheltering needs for severe storm events.	1	1	1	1	1	1	0	0.5	7	High
14.	Replace drainage culvert under I-95 to handle peak storm flows and make any other necessary improvements downstream to prevent flooding in the vicinity of Heights Road.	0	0.5	1	1	1	1	0	0.5	5.5	Medium
15.	Evaluate vulnerability of critical facilities to hazards related to sea level rise and climate change.	0	1	0.5	0	1	0	0.5	0	3	Low

Objective 3. <i>Improve the ability of Darien residents to prepare and respond to Natural Hazards.</i>											
Supporting Recommendation											
1.	Upgrade and maintain emergency notification system.	1	1	1	1	1	1	1	1	9	High
2.	Take advantage of Darien's web site to disseminate information to residents (http://www.darienct.gov).	0	0.5	0.5	1	1	1	1	0.5	6	Medium
3.	Maintain the Federal Flood Insurance Program which provides insurance for property owners in flood hazard areas, but encourage development to be located outside flood-prone areas wherever possible, including increased setbacks to account for sea level rise.	1	1	1	1	1	1	0.5	1	8.5	High
4.	Establish a practice of distributing recommended 'best-management-practices' for water resource protection brochures to all applicants for subdivision, zoning, and building permit approval.	0	1	0.5	0	1	0.5	0	1	5	Medium
5.	Support and encourage the development of Long Range Water Supply Plans, to meet the future water supply needs.	0	1	0.5	0.5	1	0.5	0	0	3.5	Low
6.	Ensure that redevelopment does not increase runoff from current conditions.	0	1	1	1	1	1	0	1	7	High
7.	Encourage landowners to retain storm water, such as by using rain barrels or planting rain gardens.	0	1	1	1	1	1	0	1	7	High

Objective 4. <i>Improve the ability of the town of Darien prepare for and respond to natural hazards.</i>											
Supporting Recommendation											
1.	Hold annual meetings with departments that may need to respond to natural disasters, focused on sharing information, coordination and to develop protocols.	1	0.5	0.5	0	1	0.5	0	0	3.5	Low
2.	Develop a secure website to be used to share data and information with emergency management and the EOC during a natural disaster.	1	0.5	0.5	0	1	1	1	0.5	6	Medium
3.	Identify ways to improve the use of GIS for use in identifying areas and facilities vulnerable to disasters and for use to enhance emergency management.	1	1	1	1	1	0.5	0.5	1	8	High
4.	Work with DEMHS to enhance Training and exercises on disaster responses and education on Property damage assessment forms.	1	0.5	0.5	0.5	1	0.5	0	0	4	Low
5.	Work with DEMHS to complete and enhance the state and regional debris management plan.	1	0.5	0.5	1	1	0.5	0	0.5	5.5	Medium

6.	Support regulatory changes recommended in the POCD regarding Zoning, Subdivision, Inland Wetlands and Watercourses regulations; and Harbors Ordinances.	0	0.5	0.5	1	1	1	0	0	4	Low
7.	Continue to develop ways to protect open space, particularly coastal lands and land within the flood plain.	0	0.5	0.5	0.5	1	0	0	0	2.5	Low
8.	Conduct a land use/build-out analysis to determine the potential for increase of impervious surfaces, particularly within the flood plain.	0	0.5	1	0.5	1	0	0	0	3	Low
9.	Encourage acquisition of wetlands beneficial to the Town.	0	0.5	0.5	0.5	1	0	0	0	2.5	Low
10.	Encourage the preservation of undeveloped lands within the 100-year flood zone with the use of Open Space purchase, donation or conservation easement.	0	0.5	0.5	0.5	1	0	0	0	2.5	High
11.	Pursue acquisition of waterfront land and easements when opportunities arise.	0	0.5	0.5	0.5	1	0	0	0	2.5	Low
12.	Continue to provide capital budget funds for drainage projects and investigation of drainage problems.	0	1	1	1	1	1	0	1	7	High
13.	Continue to encourage best management practices, including innovative Low-Impact Development (LID) practices, for managing stormwater runoff.	0	1	1	1	1	0.5	0	0.5	5.5	Medium
14.	Continue monitoring community demographics to ensure vulnerable populations are not at a disproportionately higher risk to severe storm events.	1	0.5	0.5	1	1	0.5	0.5	0.5	6	Medium
15.	Evaluate vulnerability of Town landmarks, monuments, and historically and architecturally significant buildings.	1	0.5	0.5	0	1	0	0	0	3	Low
16.	Support local, regional and state efforts to provide protection and preservation of groundwater aquifers.	0	1	1	1	1	0	0	0	4	Low
17.	Continue work with Aquarion to upgrade and maintain infrastructure to ensure proper water delivery for use by fire and emergency responders.	0	1	1	1	1	0	0	0	4	Low
18.	Consider Properties prone to flooding for elevation or acquisition as need.	0	0.5	0.5	0.5	1	0	0	0	2.5	Low

Greenwich Mitigation Strategies

Goal 1. *To reduce the loss of life and property and economic consequences as a result of natural disasters.*

Objectives: <ul style="list-style-type: none"> Expand maintenance activities and execute specific projects that address known drainage issues within the municipality. Review use of town regulations to minimize the impacts of new development on man made and natural drainage systems and to insure development within flood zones is appropriate. Petition FEMA to update the Flood Insurance Rate Maps and Floodway Maps. Improve and expand current flood warning systems and flood response procedures. 									
Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? 1 = Yes, 0.5 = May be done in a manner to address multiple hazards, 0 = No	Is the supporting task feasible? 1 = Yes, 0.5 = Possibly, 0 = No	Would the supporting task be effective in avoiding or reducing future losses? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy improve upon existing programs or support other municipal priorities? 1 = Yes, 0.5 = May be incorporated into an existing program, 0 = No	Does the cost seem reasonable for the size of the problem and likely benefits? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy do the strategy contribute to continued compliance with NFIP? 1 = Yes, 0.5 = Possibly, 0 = No, - = does not specifically target flooding	The anticipated time frame for implementation. Hr: (1) 1-2yrs, Mr: (5) 3-4 yrs, L: (10) 4+ yrs, weighted (x2)	Total*	Priority*
1. Focus on implementing public safety projects identified in the town drainage studies.	0	0.5	1	1	1	0.5	1	6	High
2. Continue conducting drainage and watershed evaluations for remaining waterbodies in the town.	0	0.5	0.5	1	0.5	0.5	0.5	4	Medium
3. Continue to work to identify proper frequency of storm drain clean out.	0	0.5	1	1	0.5	0	0	3	Low
4. Continue to provide capital budget funds for drainage projects and investigation of drainage problems.	0	1	1	1	1	0	1	6	High
5. Work with the Army Corps of Engineers to address flood-prone areas, such as the Route 1 bridge, Byram and Pemberwick.	0	1	1	1	1	0	1	6	High
6. Evaluate stormwater funding options to pay for needed stormwater improvements.	0	0.5	1	1	0.5	0	0.5	4	Medium
7. Work with the state to inventory condition of town owned culverts, bridges and dams.	0	0.5	0.5	1	1	0	0.5	4	Medium
8. Replace or repair culverts or bridges as needed.	0	0.5	0.5	1	0	0	0	2	Low
9. Improve drainage systems in Bruce Park to reduce flooding issues.	0	0.5	1	1	0.5	0	0	3	Low
10. Evaluate Binney Park storage shed to determine appropriate flood proofing method, such as raising its elevation.	0	0.5	1	1	0	0	0	2.5	Low
11. Implement improvements described in the Old Greenwich Business District and Surrounding Streets- Drainage Study.	0	1	1	1	0.5	0	0.5	4.5	Medium
12. Recommend strengthening regulations to include requirements to maintain vegetation in riparian and flood prone areas	0	1	1	1	0.5	1	0.5	5.5	Medium
13. Request that FEMA and Army Corps of Engineers assist with the reevaluation of Flood Insurance Rate studies for riverine sections and	0	0.5	1	1	1	1	0.5	5.5	Medium
14. Recommend strengthening regulations to include requirements to prevent mowing of tidal wetlands	0	0	1	1	1	1	1	5.5	Medium
15. Consider regulations to require that elevations be provided for development in A-Zones where no elevations have been determined on the FIRM maps	0	0.5	1	1	1	1	0.5	5.5	Medium

*Priority: High = > 6 ; Medium 4- 5; Low < 4

16.	Review and make appropriate changes to regulations concerning impervious surface cover in flood prone areas	0	0.5	1	1	1	1	0.5	5.5	Medium
17.	Review and modernize flood sections of the Building Zone Regulations and add standards for riverine flooding,taking into consideration the cumulative effect of development	0	0.5	1	1	1	1	0.5	5.5	Medium
18.	As needed consider mitigation of properties identified as Severe Repetitive Loss Properties by the NFIP.	0	0.5	0.5	0.5	0	1	0	2.5	Low
19.	Maintain the Federal Flood Insurance Program which provides insurance for property owners in flood hazard areas, and encourage development to be located outside flood-prone areas wherever possible, including increased setbacks or elevations to account for sea level rise.	0	1	1	1	1	1	1	7	High

Goal 2. Reduce the risks of damage to private and public facilities caused by severe storms.

Objective	<ul style="list-style-type: none"> Continue and expand current maintenance activities, inspections, and requirements and education programs that reduce the vulnerability of existing and new development to severe storm damage. Continue and expand activities related to severe storm warning and emergency preparedness. Improve and expand the town's current severe storm response capabilities. 									
	Supporting Recommendation									
1.	As needed procure equipment to sustain critical facilities in the event of a disaster (i.e. obtain additional generators) to enhance EOC capabilities.	1	0.5	0.5	1	0	-	0	3	Low
2.	State to evaluate and monitor conditions of all of dams and to enforce existing citations for dam violations.	0	0.5	1	1	0	-	0.5	3.5	Medium
3.	Continue to inventory condition of town owned culverts and bridges.	0	1	1	1	0.5	-	0.5	4.5	Medium
4.	Explore improvements to telecommunications systems to minimize disruption and delays during an emergency.	1	0.5	0.5	1	0	-	0	3	Low
5.	Evaluate municipalities' sheltering and evacuation needs for a variety of storm scenarios.	1	0.5	1	1	0.5	-	0	4	Low
6.	Continue to maintain emergency notification system and upgrade as needed.	1	1	1	1	0	-	0	4	Low
7.	Continue to enhance community preparedness programs.									
	<ul style="list-style-type: none"> Explore developing a "phased approach" to citizen preparedness (i.e. introductory brochures identifying simple and inexpensive tasks, and more advanced brochures with additional tasks and actions to be done to prepare you family and home for a natural disaster that may be more sophisticated in nature or more expensive). Continue to provide education materials on preparing for natural disasters. 	1	1	1	1	0.5	-	0.5	5.5	Medium
8.	Work with State to enhance local information and data sharing using WEB EOC 7.1.	1	1	0.5	1	0.5	-	0.5	5	Medium
9.	Continue to identify ways to improve the use of GIS for identifying areas and facilities vulnerable to disasters and for use to enhance emergency management	1	0.5	1	1	0.5	-	0	4	Low
10.	Continue to work with DEMHS to enhance training and exercises on disaster responses and education on Property damage assessment forms.	0.5	0.5	0.5	1	1	-	0	3.5	Low

11.	Work with DEMHS and the DEP to complete and enhance the state and regional debris management plan.	1	0.5	0.5	1	1	-	0.5	5	Medium
12.	Complete the Public Safety Complex and improve the emergency communications systems.	1	0.5	1	1	0.5	-	0.5	5	Medium
13.	Work with Aquarion Water Company to encourage appropriate water line extensions to meet fire protection needs.	1	0.5	1	1	0	-	0	3.5	Low
14.	Construct a new firehouse on Upper King Street near the Griff Harris Golf Course.	1	1	1	1	0	-	0.5	5	Medium
15.	Work with neighboring municipalities to complete a Tree Inventory to assess potential damage for severe storm events.	1	0.5	0.5	1	0.5	-	0.5	4.5	Low

Goal 3. Implement and expand drought mitigation plans and initiatives.

- Objective**
- ◇ Update Drought Management Plan and review and update regulations as necessary.
 - ◇ Educate the public through additional outreach and notification processes.

Supporting Recommendation										
1.	Work to improve communications between the town, state and Aquarion prior to and during drought conditions.	0	1	1	1	1	-	1	6	High
2.	Work with State to update the Drought Management Plan.	0	1	0.5	1	0.5	-	0.5	4	Medium
3.	Study effectiveness of regulations during drought conditions.	0	1	0.5	1	1	-	0.5	4.5	Medium
4.	Review USGS groundwater study and make recommendations for regulations to protect groundwater quality and quantity.	0	0.5	0.5	1	1	-	0.5	4	Medium
5.	Work with Aquarion Water Co. on infrastructure improvements, both in town and inter-town.	0	1	0.5	1	0.5	-	0.5	4	Medium
6.	Update drought management plan to be in alignment with State of Connecticut Drought Management plan.	0	1	1	1	1	-	1	6	High
7.	Identify which dry hydrants work in drought conditions and which do not. Evaluate which hydrants may need to be deeper and areas where more hydrants need to be installed.	0	1	0.5	1	1	-	0.5	4.5	Medium
8.	Consider if underground storage tanks for fire protection need to be required for new development.	0	1	0.5	1	1	-	0.5	4.5	Medium
9.	Review winter drought restrictions and conservation measures, and evaluate possible education and outreach programs that may be helpful.	0	1	0.5	1	0.5	-	0	3	Low
10.	Continue outreach programs encouraging water conservation.	0	1	0.5	1	0.5	-	0.5	4	Medium
11.	Develop and continue programs to educate the public on measures to take during winter drought conditions.	0	1	0.5	1	1	-	0.5	4.5	Medium
12.	Maintain Emergency Operation Plan and specific information needed to respond to drought conditions.	0	1	0.5	1	1	-	0.5	4.5	Medium

Norwalk Mitigation Strategies

Goal *Reduce the loss of life and property and economic consequences as a result of flooding, high winds, severe winter storms and dam failure.*

Objective <i>Improve the ability of Norwalk departments to prepare and respond to severe weather and other natural emergencies.</i>									
Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? 1 = Yes, 0.5 = May be hazards, 0 = No	Is the supporting task feasible? 1 = Yes, 0.5 = Possibly, 0 = No	Would the supporting task be effective in avoiding or reducing future losses? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy improve upon existing programs or support other municipal priorities? 1 = Yes, 0.5 = May be incorporated into an existing program, 0 = No	Does the cost seem reasonable for the size of the problem and likely benefits? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy does the compliance contribute to continued implementation with NFIP? 1 = Yes, 0.5 = Possibly, 0 = No	The anticipated time frame for implementation. H:(1) 1-2yrs, M:(.5)3-4 yrs, L:(0)4+ yrs; weighted (x2)	Total*	Priority*
1. Provide adequate back-up generators at critical facilities.	1	1	1	1	1	0	1	7	High
• City Hall							0	4	Low
• Sanitary sewer pumping stations (in progress)							1	7	High
• Storm water pumping stations							0.5	6	Medium
• Shelters (shelter area and beyond). BMHS/NHS done							1	7	High
• Alternate EOC at Norwalk Fire Dept							1	7	High
2. Ensure the ability of Departments to function beyond first 24 hours by executing pre-positioned contracts for logistical support.	1	1	1	1	1	0	1	7	High
3. Maintain the Federal Flood Insurance Program which provides insurance for property owners in flood hazard areas, but encourage development (especially higher density) to be located outside flood-prone areas wherever possible, including increased setbacks to account for sea level rise .	0	1	1	1	1	1	1	7	High

Objective <i>Whenever practical, incorporate natural hazard mitigation strategies into existing City projects.</i>									
Supporting Recommendation									
1. Expand maintenance activities such as more frequent catch basin, storm drainage facilities and channel cleaning.	0	1	1	1	1	1	1	7	High
2. Request capital funding for drainage and flood mitigation projects throughout the City.	0	1	1	1	1	0.5	0.5	5.5	Medium

Objective <i>Reduce the likelihood and potential loss of life and property as a result of dam failure.</i>									
Supporting Recommendation									
1. Upgrade the flood spillway of the Browns and Grupes Reservoir Dams.	0	0.5	0.5	1	0.5	-	0	2.5	Low

*Priority High = ≥ 6 ; Medium 4- 5; Low < 4

Stamford Mitigation Strategies

Goal. To reduce the loss of life and property and economic consequences as a result of natural disasters.

Objective 1. ◇ Improve the City of Stamford's ability to prepare for and providing emergency and other public services in the event of a natural disaster.

Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? 1 = Yes, 0.5 = May be done in a manner to address multiple hazards, 0 = No	Is the supporting task feasible? 1 = Yes, 0.5 = Possibly, 0 = No	Would the supporting task be effective in avoiding or reducing future losses? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy improve upon existing programs or support other municipal priorities? 1 = Yes, 0.5 = May be incorporated into an existing program, 0 = No	Does the cost seem reasonable for the size of the problem and likely benefits? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy does the compliance contribute to continued compliance with NFIP? 1 = Yes, 0.5 = Possibly, 0 = No, - = does not specifically target flooding	The anticipated time frame for implementation. H:(1) 1-2yrs, M:(.5)3-4 yrs, L:(0)+ yrs; weighted (x2)	Total*	Priority*
1. Continue to hold annual meetings with departments that may need to respond to natural disasters, focused on sharing information, coordination and to develop protocols.	1	1	1	1	1	-	1	7	High
2. Update the EOC plan book with current contact information for "key" department personnel, resources and facilities; and all pertinent maps and city plans. Provide copies to each department head and "key" staff.	1	1	1	1	1	-	1	7	High
3. Quarterly review and update the EOC plan book.	1	1	1	1	1	-	1	7	High
4. Develop a secure website to be used to share data and information with emergency management and the EOC during a natural disaster	1	0.5	0.5	0	0.5	-	0.5	3.5	Low
5. Work with police to improve communication shared information between the newly designed EOC at police headquarters and the existing EOC in the Government Center.	1	0.5	1	1	0.5	-	0.5	5	Medium
6. Evaluate the 911 center's ability to function during an emergency or natural disaster and increase and cross train personnel to accommodate the city's needs during a disaster.	1	1	1	1	1	-	1	7	High
7. Work with 911 center and emergency management to develop a system to handle call backs and coordination; and improve direct communications between the 911 center and emergency responders.	1	0.5	1	1	0.5	-	0.5	5	Medium
8. Work to develop a direct communications link between the EOC and 911 communications center.	1	1	1	1	1	-	0.5	6	High
9. Identify ways to improve the use of GIS for use in identifying areas and facilities vulnerable to disasters and for use to enhance emergency management.	1	1	1	1	1	-	0.5	6	High
10. Refine and provide usable sewer and drainage system maps to EOC and Emergency responders.	0	1	1	1	1	-	1	6	High
11. Ensure that all critical systems maps are easily accessible to 911 and the EOC.	1	0.5	1	1	1	-	0.5	5.5	Medium

12.	Develop evacuation plan and routes for moving traffic north-south, and east-west in the event of a large scale disaster. Also consider how signal timing will be handled if trained staff are not available.	1	0.5	1	0	0.5	-	0.5	4	Low
13.	Continue working with the Red Cross to maintain and update the city's shelter plan.	1	1	1	1	0.5	-	0.5	5.5	Medium
14.	Evaluate current sheltering location's ability to handle large scale evacuations.	1	0.5	0.5	0	1	-	0	3	Low
15.	Develop a sheltering/evacuation process to improve collaboration between the Health Department, Operations, Fire and Police and review the process regularly to ensure each department knows their responsibilities and where resources are located.	1	0.5	0.5	1	1	-	0	4	Low
16.	Explore having pre-recorded messages for a variety of scenarios for use by the City's Reverse 911 system.	1	0.5	0.5	0	0.5	-	0.5	3.5	Low
17.	Consider having pre-recorded messages available in additional languages.	1	0.5	0.5	0	0.5	-	0.5	3.5	Low
18.	Develop information educating citizens on registration and use of the emergency notification system and investigate the possibility of providing information in other languages.	1	1	0.5	0.5	0.5	-	0.5	4.5	Medium
19.	Work with DEMHS to enhance training and exercises on disaster responses and education on property damage assessment forms.	0.5	0.5	0.5	1	0.5	-	0	3	Low
20.	Reduce impervious surfaces by adopting impervious coverage allowances for all zoning districts or amending regulations to decrease need for impervious surfaces.	0.5	0.5	1	1	1	1	0.5	6	Medium
21.	Acquire snow melting machines to melt excess snow from severe winter storms.	0	0.5	1	0	0	-	0	1.5	Low
22.	Acquire the site at 128 Magee Avenue as a staging area for excess snow, large wood waste and uniformed services	1	0	1	0	0	-	0	2	Low
23.	Assess vulnerability of critical facilities to earthquakes, hurricanes, tornadoes and begin to evaluate the potential impact sea level rise may have on these facilities.	1	1	0.5	0	0.5	-	0	3	Low
24.	Begin to investigate potential impacts resulting from sea level rise.	0	1	0.5	0	0.5	0	0.5	3	Low

Objective 2. ✧ Whenever practical, incorporate natural hazard mitigation strategies into existing City projects and plans.

Supporting Recommendation										
1.	Continue to incorporate recommendations from the Mill River Corridor Plan.	0	0.5	1	1	0	0.5	0	3	Low

Objective 3. ✧ Reduce the likelihood of floods.

Supporting Recommendation										
1.	Move forward with plans to rebuild the West Main Street Bridge for use by pedestrians and emergency vehicles only. Plans shall include elevating the bridge deck above the 100-year flood plain and removing several piers.	0	1	1	1	0	1	0.5	5	Medium
2.	Encourage acquisition of wetlands beneficial to the City.	0	0.5	1	1	0	1	0	3.5	Low
3.	Encourage the preservation of undeveloped lands within the 100-year flood zone with the use of Open Space purchase, donation or conservation easement.	0	0.5	1	1	0	1	0	3.5	Low

4.	Maintain the Federal Flood Insurance Program which provides insurance for property owners in flood hazard areas, but encourage development (especially higher density) to be located outside flood-prone areas wherever possible, including increased setbacks to account for sea level rise .	0	1	1	1	1	1	1	7	High
5.	Pursue acquisition of waterfront land and easements when opportunities arise.	0	0.5	1	1	0	1	0	3.5	Low
6.	Enhance storm drain maintenance activities.	0	1	1	1	0.5	1	1	6.5	High
	• Maintain records for storm drain maintenance.									
	• Continue to work to increase frequency of storm drain clean out.									
	• Continue to identify and eliminate cross connections between storm and sanitary sewer systems.	0	1	1	1	0.5	1	1	6.5	High
7.	Continue to provide capital budget funds for drainage projects and investigation of drainage problems.									
8.	Ensure that redevelopment reduces runoff from current conditions.									
9.	Continue to encourage best management practices, including innovative Low-Impact Development (LID) practices, for managing stormwater runoff.	0	0.5	1	1	1	1	0	4.5	Low
10.	Work with Aquarion and the state to evaluate and monitor conditions of all of dams and to identify properties that may be impacted by a dam failure for all high risk dams in Stamford.	0	0.5	1	1	1	0	0.5	4.5	Medium

Objective 4. ✧ Reduce the frequency and severity of power outages and road closures as a result of storm events.

Supporting Recommendation										
1.	Support applications and use for tree management software by the parks department to ease the burden of responding to complaints, improve preventative maintenance and for use as an overall planning tool.	1	1	1	0	0	-	0.5	4	Medium
2.	Work with the City Operations, Parks and Highways Dept. staff, and Connecticut Light and Power staff, to develop a plan for clearing debris in the event of a severe storm.	1	0.5	0.5	1	0.5	-	0	3.5	Low
3.	Work with utility companies to improve communications during a storm event and identify a direct contact.	1	1	1	1	1	-	1	7	High
4.	Explore methods to improve and enhance telecommunications.	1	0.5	0.5	0	0	-	0	2	Low
5.	Encourage the study of alternative systems for delivering reliable power to residents.	1	1	0.5	0.5	0	-	0	3	Low
6.	Work with DEMHS to complete and enhance the state and regional debris management plan and to address local needs.	1	0.5	0.5	1	0.5	-	0.5	4.5	Medium
7.	Conduct a town-wide inventory and assessment of street trees, consider conducting the inventory in conjunction with other municipalities in the region.	1	0.5	0.5	1	0	-	0.5	4	Medium
8.	Continue to commit capital funding annually for public tree maintenance and plantings.	1	1	0.5	1	0	-	0.5	4.5	Medium

Weston Mitigation Strategies

Goal *To reduce the loss of life and property and economic consequences as a result of natural emergencies*

Objective 1. *Whenever practical, incorporate natural hazard mitigation strategies into existing City projects.*

Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? 1 = Yes, 0.5 = May be done in a manner to address multiple hazards, 0 = No	Is the supporting task feasible? 1 = Yes, 0.5 = Possibly, 0 = No	Would the supporting task be effective in avoiding or reducing future losses? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy improve upon existing programs or support other municipal priorities? 1 = Yes, 0.5 = May be incorporated into an existing program, 0 = No	Does the cost seem reasonable for the size of the problem and likely benefits? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy does the compliance with NFIP? 1 = Yes, 0.5 = Possibly, 0 = No, - = does not specifically target flooding.	The anticipated time frame for implementation. H:(1) 1-2yrs, M:(.5)3-4 yrs, L:(0)4+ yrs; weighted (x2)	Total*	Priority*
1. Weston's Beautification Committee and public works should work with residents on proper tree maintenance to minimize debris created during a storm event.	0	0.5	1	0.5	1	-	0	3.0	Low
2. Town Government should actively seek opportunities to purchase or solicit the donation of additional open space particularly properties located within the flood plain.	0	0.5	1	1	0.5	0.5	0.5	4.5	Medium
3. Begin to investigate how sea level rise may impact the community.	0	0.5	0.5	0	1	0	0	2.0	Low
4. Implement recommended improvements from the Route 57 and School Road engineering study to ensure safe access to emergency shelters and to facilitate emergency response	0	0.5	1	1	0.5	-	1	5.0	Medium
5. Maintain the Federal Flood Insurance Program which provides insurance for property owners in flood hazard areas, but encourage development to be located outside flood-prone areas wherever possible, including increased setbacks to account for sea level rise.	0	1	1	1	1	1	1	7.0	High
6. The Conservation Commission should explore LID methodology and, together with the Planning and Zoning Commission, promulgate regulations for Weston that embrace that approach, including revisiting and strengthening regulations controlling changes in rates and direction of runoff from roadways and lots; encouraging retention of existing forests, outcrops, ridges and stone walls; urging selective rather than clear cutting of trees; and updating the Weston	0	0.5	1	1	1	1	0.5	5.5	Medium
7. Develop a GIS application to assist personnel in the event of an emergency or natural disaster.	1	1	1	0	1	-	1	6.0	High

Objective 2. *Continue and expand current maintenance activities, inspections, and requirements.*

Supporting Recommendation									
1. Institute water volume monitoring program.	0	1	1	1	1	1	1	7.0	High

2.	Examine possible regulation requiring engineered systems to control runoff from new subdivision roads and parking lots.	0	0.5	0.5	1	0.5	1	0.5	4.5	Medium
3.	Examine possible regulation of erosion and runoff.	0	1	1	1	1	1	1	7.0	High
4.	Town Government, together with the Fire Department, Police Department and Town Engineer, should promulgate regulations for all Weston roads to ensure ease of emergency access.	0	1	1	1	1	-	1	6.0	High
5.	Consider developing a town wide driveway ordinance to accommodate emergency vehicles.	0	1	1	1	1	-	1	6.0	High
6.	Consider Properties prone to flooding for elevation or acquisition as needed.	0	1	1	1	0.5	0.5	0.5	5.0	Medium
7.	Consider a town-wide investigation of culverts or bridges that may need to be replaced or repaired. Conduct necessary repairs or replacement as needed.	0	1	1	1	0.5	1	0.5	5.5	Medium
8.	Work with DEP to enforce exiting citations for dam violations.	0	0.5	1	1	0.5	-	0	3.0	Low
9.	Continue to monitor dam conditions and to identify any unpermitted changes to a dam structure that may impact the dams' integrity or alter the flood path.	0	0	1	1	0.5	0.5	0	3.0	Low
10.	Assess vulnerability of existing critical facilities to earthquakes, hurricanes, tornadoes.	0	1	1	0.5	1	-	0.5	4.5	Medium
11.	Consider participation in an inter-municipal tree condition inventory.	0	0.5	0.5	0	0	-	0.5	2.0	Low

Objective 3 ◇ *Continue and expand activities related to natural hazard warning and emergency preparedness.*

Supporting Recommendation										
1.	Continue working to expand further development of fire ponds and cisterns.	0	1	1	1	0.5	-	1	5.5	High
2.	Work with home owners in the vicinity of Cobs Mill Pond and Beaver Brook to remove silt and debris and consider use as fire ponds.	0	0.5	1	1	0	-	0	2.5	Low
3.	Investigate ways to enhance telecommunication infrastructure and emergency communication throughout the town.	1	0.5	1	1	0.5	-	1	6.0	High
4.	Identify equipment and resources to sustain critical facilities in the event of a disaster (i.e. obtain additional generators), and procure items as needed.	1	1	1	1	0.5	-	0.5	5.5	Medium
5.	Work with DEMHS to complete and enhance the state and regional debris management plan.	1	1	0.5	1	1	-	0	4.5	Medium
6.	Evaluate municipalities sheltering and evacuation needs for a variety of storm scenarios.	1	1	1	0.5	1	-	0	4.5	Low
7.	Continue to upgrade and maintain emergency notification as necessary.	1	1	1	1	1	-	1	7.0	High
8.	Continue to work with DEMHS to conduct training and exercises on disaster responses and education on Property damage assessment forms.	0.5	0.5	0.5	1	0.5	-	0.5	4.0	Medium
9.	Work with property owners to elevate critical systems (i.e. electrical boxes, hot water heaters etc.) in wet and flood prone areas.	0	0.5	1	0	1	1	0	3.5	Low
10.	Encourage the study of alternative systems for delivering reliable power to residents.	1	0.5	1	0	0.5	-	0	3.0	Low

11.	Encourage wherever possible the under-grounding of all utilities to minimize service disruptions due to inclement weather. Require all new development and subdivisions to install underground utilities.	1	0	1	1	0	-	0	3.0	Low
12.	Enhance Community preparedness programs:	1	1	1	1	0	0.5	0	4.5	Medium
	· Develop educational materials and brochures promoting emergency preparedness and ‘best management practices’ for natural resources, targeted to homeowners.									
	· Explore developing a “phased approach” to citizen preparedness (i.e. introductory brochures identifying simple and inexpensive tasks, and more advanced brochures with additional tasks and actions to be done to prepare you family and home for a natural disaster that may be more sophisticated in nature or more expensive).									
	· Provide “welcome kits” to new home owners for properties located within the flood plain, or with a significant risk of flooding.									

Westport Mitigation Strategies

Proposed Mitigation Strategies - Flooding

Goal. Reduce the loss of life and property as a result of floods.

Objective 1. ♦ Educate the public in the areas of storm damage potential, mitigation activities and preparedness.

Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? I = Yes, 0.5= May be hazards, 0 = No	Is the supporting task feasible? I = Yes, 0.5 = Possibly, 0 = No	Would the supporting task be effective in avoiding or reducing future losses? I = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy improve upon existing programs or support other be incorporated into an existing program, 0 = No	Does the cost seem reasonable for the size of the problem and likely benefits? I = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy does the compliance contribute to continued target flooding. Possibly, 0 = No, - = does not specifically implement.	The anticipated time frame for implementation, H:(1) 1-2yrs, M:(5)3-4 yrs, L:(0)4+ yrs; weighted (x2)	Total*	Priority*
1. Provide “welcome kits” to new home owners for properties located within the flood plain, or with a significant risk of flooding.	0.5	0.5	0.5	0	0.5	0.5	0	2.5	Low
2. Encourage landowners to retain storm water, such as by using rain barrels or planting rain gardens.	0	0.5	1	0.5	1	1	0.5	5	Medium
3. Encourage private property owners in the potentially troubled areas to properly maintain the stream channel. If necessary, Westport can pursue clearing rights on these parcels using provisions of the state drainage statutes.	0	0.5	0.5	1	0.5	0.5	0	3	Low

Objective 2. ♦ Acquire flood prone properties and those which provide valuable recreational opportunities, and flood storage potential and benefit the greatest number of Westport residents.

Supporting Recommendation									
1. Identify properties prone to flooding that may be considered for elevation or acquisition, consider implementing as necessary or as funding becomes available.	0	0.5	0.5	1	0.5	0.5	0	3	Low

Objective 3. ♦ Use town regulations and ordinances to minimize the impacts of new development on the natural drainage system and to ensure appropriate development occurs in floodplains.

Supporting Recommendation									
1. Identify and publicize regulations that will preserve and protect watercourses, waterbodies, wetlands, steep slopes, and floodplains, and those that will conserve floodplain fringe areas, wellhead areas, areas of high groundwater availability, and unique/special habitat areas.	0	1	1	1	1	1	1	7	High
2. Further control building in floodplain areas.	0	1	1	1	1	1	1	7	High
3. Minimize the amount and intensity of development in coastal “V” flood zones: Eliminate new non-water dependent development from “V” zones and only allow new structures that meet current “V” zone construction.	0	0.5	1	1	0.5	1	0.5	5	Medium

4.	Require to the extent possible, minimization of site imperviousness, maintenance of natural buffers, and use of natural drainage systems.	0	0.5	1	0.5	0.5	1	0	3.5	Low
5.	Change the floodplain regulations to require at least one foot of freeboard for new or substantially improved homes.	0	1	1	1	1	1	1	7	High
6.	Require approval and drainage review before clear cutting for new and redevelopment, especial near steep slopes or with a certain percentage of impervious surface.	0	0.5	1	1	1	0.5	0.5	5	Medium
7.	Reduce impervious surfaces by adopting impervious coverage allowances for all zoning districts or amending regulations to decrease need for impervious surfaces. Ensure that redevelopment reduces runoff from current conditions.	0	0.5	1	0	1	1	0	3.5	Low
8.	Recommend strengthening regulations to include requirements to maintain vegetation in riparian and flood prone areas.	0	0.5	1	1	1	1	0.5	5.5	Medium
9.	Recommend strengthening regulations to include requirements to prevent mowing of tidal wetlands.	0	1	1	1	1	1	0.5	6	Medium
10.	Review and make appropriate changes to regulations concerning impervious surface cover in flood prone areas.	0	1	1	1	1	1	0.5	6	Medium
11.	Review and modernize flood sections of the Building Zone Regulations and add standards for riverine flooding and taking into consideration the cumulative affect of development.	0	1	1	1	1	1	0.5	6	Medium
12.	Study the use of V-Zone standards for foundation design in coastal A Zones.	0	1	0.5	0.5	1	1	0.5	5	Medium
13.	Review the existing Waterway Protection Line ordinance and consider amendments that place the responsibility for stream channel maintenance on the property owner and give Westport enforcement power. Such ordinances would include stream dumping, channel maintenance, and land clearing disturbances. These ordinances would reduce the likelihood of localized flooding and could lead to additional points toward CRS reclassification.	0	1	1	1	1	1	0.5	6	Medium
14.	Evaluate the zoning regulations for ways to reduce land coverage and building size.	0	1	1	1	1	1	0.5	6	Medium

Objective 4. *Expand maintenance activities and execute specific projects that alleviate riverine related flooding in addition to the restoration and improvement of natural floodplain and wetland areas.*

Supporting Recommendation									
1. Address Saugatuck River, Sherwood Mill Pond and Sasco Creek/ Pond maintenance and management with strategies to address silting.	0	1	1	1	1	0.5	1	6.5	High
2. Undertake preparation of an update to the 1970 master drainage plan (the "Jackson" study).	0	0.5	1	1	0.5	0.5	0	3.5	Low
3. Identify and address storm drainage and flooding issues on private property and in the streets.	0	1	1	1	1	0.5	1	6.5	High
4. Address the effect of groundwater on drainage.	0	1	1	1	1	1	1	7	High
5. Include provision for street drainage improvements and maintenance projects in the municipal budget on an annual basis.	0	1	1	1	1	0	1	6	High
6. Work with CTDOT and DEP to maintain flow of streams through expansive wetlands.	0	0.5	1	1	1	0.5	0.5	5	Medium
7. Maintain catch basins regular maintenance schedule, develop a plan for dealing with backups/failing.	0	0.5	1	1	1	0	1	5.5	High

8.	Westport will encourage the Aspetuck Land Trust to initiate a maintenance program for Sasco Creek as it passes through their property, in an attempt to foster an understanding that maintaining a clear channel in the northern section of the parcel will reduce flooding occurrences on Gristmill Lane. If necessary, Westport can pursue clearing rights on this parcel using provisions of the state drainage statutes.	0	0.5	1	1	0	0	0	2.5	Low
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Objective 5. ◇ Mitigate against flood damage by undertaking cost effective structural projects.

Supporting Recommendation										
1.	Undertake a comprehensive study with state and federal agencies to recommend specific strategies for effective erosion abatement.	0	0.5	1	0.5	0.5	0	0	2.5	Low

Objective 6. ◇ Improve and expand current flood warning systems and flood response procedures.

Supporting Recommendation										
1.	Investigate and pursue the purchase of an automated sand bagger.	0	1	1	1	0	0.5	0.5	4.5	Medium
2.	Identify funding sources and install additional staff gauges for smaller streams, including (but not limited to) Sasco Creek, Muddy Brook and Upper Willow Brook.	0	1	1	1	0.5	1	0.5	5.5	Medium

Objectives: ◇ Westport will endeavor to support increased awareness and purchases of flood insurance.

◇ Increase Westport's CRS rating to further reduce flood insurance premiums.

◇ Work with FEMA to include more detailed data on the Flood Insurance Rate Maps and Floodway Maps, particularly in unnumbered A-Zones.

Supporting Recommendation										
1.	Provide the update FIRM maps and information on the National Flood Insurance Program on the Town's website.	0	0.5	1	1	1	1	0.5	5.5	Medium
2.	Request that FEMA Continue to work to improve the accuracy of the update FIRM maps, with special attention paid to unnumbered A-zones.	0	1	0.5	1	1	1	0.5	5.5	Medium
3.	Provided new data to FEMA as it becomes available to enhance efforts already under way.	0	0.5	0.5	0	1	1	0	3	Low

Proposed Mitigation Strategies - Severe Storms and Tornadoes

Goal 1. Educate the public of wind damage potential, mitigation activities and preparedness.

Objectives: ◇ Provide education opportunities to the affected community, builders, developers and town officials so that future construction and landscaping associated with construction is designed to minimize wind damage and retrofitting of existing structures and maintenance of property are implemented to the benefit of public safety and property loss reduction.

◇ Ensure clear and concise severe weather alerts reach 100% of the population in Westport.

◇ Minimize property loss/damage and personal safety risk due to falling tree damage following a severe storm event.

Supporting Recommendation										
1.	Maintain the severe weather forecasting and warning systems.	1	1	1	1	0.5	-	1	6.5	High

Goal 2. Reduce the risk of damage to utility infrastructure in Westport as a result a severe storm event.

Objectives: ◇ Ensure falling trees or branches do not damage utility lines during a severe storm event.

◇ Ensure improvement of emergency power and communication capabilities during a severe storm event.

- ◇ *Keep drainage paths open.*
- ◇ *Limit damage to utility lines and property and injury or loss of life by fallen trees, tree limbs, and brush.*

Supporting Recommendation									
1. Regularly evaluate the health of town roadway trees; trim or remove dangerous branches and remove unhealthy trees.	1	0.5	1	1	0.5	-	0.5	5	Medium
2. Evaluate the feasibility of moving trees out of the right of way and onto the edge of properties to protect above ground utilities.	1	0.5	0.5	0.5	1	-	0.5	4.5	Medium
3. Continue to explore moving existing utilities underground and requiring underground utilities for new developments and subdivisions.	1	0.5	1	1	0	-	0	3.5	Low

Goal 3. Broaden response capabilities of emergency responders in dealing with the preparation and aftermath of a severe storm event.

- Objectives:
- ◇ *Ensure municipal facilities are adequately supplied and equipment is in proper working order.*
 - ◇ *Ensure there are damage assessment capabilities for emergency response personnel following a severe storm event.*
 - ◇ *Improve and expand current severe weather warning systems.*
 - ◇ *Improve and expand response capabilities that serve the disabled, elderly, and vulnerable population groups.*

Supporting Recommendation									
1. Complete and implement a study to address the needs of the Police/Emergency Medical services.	1	1	1	1	0.5	-	1	6.5	High
2. Identify person to work with Emergency Management at the EOC during an emergency to provide information system support.	1	1	1	1	1	-	1	7	High
3. Work to update vulnerable population database on a quarterly basis.	1	1	1	1	1	-	1	7	High
4. Promote an adequate supply of public water to serve the domestic, commercial and fire protection requirements of Westport.	1	1	1	1	1	-	1	7	High
5. Identify additional sites for yard waste and storm debris.	1	0.5	1	1	1	-	1	6.5	High
6. Continue to support the extension of public water service and fire hydrants throughout Westport.	1	0.5	1	1	0	-	0	3.5	Low
7. Improve telecommunications.	1	0.5	1	1	0.5	-	0.5	5	Medium
8. Evaluate municipality's sheltering and evacuation needs for a variety of storm scenarios.	1	1	1	1	0	-	0	4	Low
9. Maintain emergency notification system and update as needed.	1	1	1	1	0.5	-	0.5	5.5	Medium
10. Work with DEMHS to complete and enhance the state and regional debris management plan.	1	0.5	1	1	1	-	0.5	5.5	Medium
11. Conduct training and exercises on disaster responses and education on property damage assessment forms.	1	0.5	0.5	0.5	0.5	-	0	3	Low

Goal 4. Reduce losses to public and private structures in Westport from severe storm vents.

- Objectives:
- ◇ *Ensure existing buildings and historically significant buildings are inventoried to identify potential losses from severe storm events.*
 - ◇ *Encourage implementation of preventive measures for existing development to reduce the vulnerability to severe weather damage.*
 - ◇ *Ensure mobile homes and mobile home parks throughout Westport are inventoried to identify potential for losses from severe storm events.*
 - ◇ *Ensure that critical facilities are protected against wind damage.*

Supporting Recommendation									
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1.	Inventory condition of problem culverts and bridges and consider repairs or replacement as necessary or as funding becomes available.	1	0.5	1	1	0.5	0.5	0.5	5.5	Medium
2.	Develop a notification system reminding critical facilities to evaluate storm preparedness every 5 years.	1	0.5	0.5	0	1	-	0	3	Low
3.	Develop a notification system for mobile home owners/residents to evaluate storm preparedness every 5 years of when ownership changes.	1	0.5	0.5	0	1	-	0	3	Low

Proposed Mitigation Strategies - Earthquake

Goal 1. To reduce loss of life and property as a result of earthquakes.

Objectives: <ul style="list-style-type: none"> ◇ Educate the public about the threat of earthquakes. ◇ Assess the vulnerability of critical facilities to earthquakes. ◇ Ensure that future construction of critical facilities is scrutinized more than other developments to determine the suitability of locations in the event of earthquakes hurricanes and tornadoes. ◇ Ensure that emergency responders have the ability to communicate and respond effectively in the event of an earthquake. 										
Supporting Recommendation										
1.	Work to harden critical facilities and shelter locations to withstand significant weather events, for public use during an emergency.	1	1	1	1	0.5	-	1	6.5	High
2.	Begin to evaluate the structural integrity of Town own Critical Facilities and buildings and there ability to withstand earthquakes.	0	0.5	1	0	1	-	0	2.5	Low
3.	Encourage privately owned critical facilities to evaluate the ability of the buildings to withstand earthquakes and tornadoes, and to address and deficiencies identified.	1	0.5	1	0	1	-	0	3.5	Low
4.	Develop a notification system reminding critical facilities to evaluate storm preparedness every 5 years.	1	0.5	0.5	0	1	-	0	3	Low
5.	Develop a notification system for mobile home owners/residents to evaluate storm preparedness every 5 years of when ownership changes.	1	0.5	0.5	0	1	-	0	3	Low
6.	Zoning regulations and other ordinances and municipal laws governing the siting of new development, (new subdivisions of more than 10 houses and critical facilities), will be examined to determine if site geology is properly considered in the siting of critical use facilities. If deficiencies are identified, necessary changes will be studied and incorporated into the review of proposals for the development of such facilities.	0	0.5	0.5	0.5	1	-	0	2.5	Low

Proposed Mitigation Strategies- Drought

Goal. Implement and expand drought mitigation plans and initiatives.

Objectives: <ul style="list-style-type: none"> ◇ Update Drought Management Plan and review and update regulations as necessary. 										
Supporting Recommendation										
1.	Study effectiveness of regulations during drought conditions.	0	1	1	1	0.5	-	0.5	4.5	Medium
2.	Review USGS groundwater study and make recommendations for regulations to protect groundwater quality and quantity.	0	1	1	0.5	0.5	-	0.5	4	Medium
3.	Work with Aquarion Water Co. on infrastructure in town and inter-town.	0	1	0.5	1	1	-	0.5	4.5	Medium

4.	Update drought management plan to be in alignment with State of Connecticut Drought Management plan.	0	1	0.5	1	1	-	0.5	4.5	Medium
5.	Review winter drought restrictions and conservation measures, and evaluate possible education and outreach programs that may be helpful.	0	1	0.5	0.5	0	-	0	2	Low
6.	Consider if underground storage tanks for fire protection need to be required for new development.	0	1	0.5	1	0.5	-	0.5	4	Medium

Proposed Mitigation Strategies- Dam Safety

Goal. *To reduce the loss of life and property as a result of dam failure.*

Objectives: ◇ *Help private dam owners obtain financial assistance for dam repairs.*

◇ *Improve and expand current dam failure warning systems.*

Supporting Recommendation										
1.	Work with the State and property owners to identify funding and repair of the Bulkley Pond Dam on Sasco Creek.	0	0.5	1	1	0	-	0	2.5	Low
2.	Continue to install warning gauges on local dams as the opportunity or need arises.	0	1	1	1	0	0.5	0.5	4.5	Medium

Proposed Mitigation Strategies- Sea Level Rise

Goal. *To reduce the potential vulnerability for loss of life and property as a result of sea level rise.*

Objectives: ◇ *Ensure that town facilities are able to withstand the potential impacts of sea level rise.*

◇ *Educate the town and its citizens as to the potential loss that may result in sea level rise due to climate change.*

◇ *Work to minimize increased vulnerability to new construction in areas that may be impacted by sea level rise.*

Supporting Recommendation										
1.	Continue to monitor information on global sea level rise.	0	1	1	1	1	-	1	6	High
2.	Evaluate how to best prepare for the implications of global sea level rise to best balance public health, safety, and welfare.	0	1	1	1	1	-	1	6	High
3.	Minimize the amount and intensity of development in coastal "V" flood zones: Eliminate new non-water dependent development from "V" zones and only allow new structures that meet current "V" zone construction.	0	1	1	0.5	1	-	0.5	4.5	Medium

Wilton Mitigation Strategies

Goal. *Reduce the loss of life and property and economic consequences as a result of flooding, high winds, severe winter storms and dam failure.*

Objective 1. *Improve the ability of Wilton residents to prepare for and respond to approaching severe weather.*

Supporting Recommendation	Does the supporting task mitigate multiple natural hazards? 1 = Yes, 0.5 = May be done in a manner to address multiple hazards, 0 = No	Is the supporting task feasible? 1 = Yes, 0.5 = Possibly, 0 = No	Would the supporting task be effective in avoiding or reducing future losses? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy improve upon existing programs or support other municipal priorities? 1 = Yes, 0.5 = May be incorporated into an existing program, 0 = No	Does the cost seem reasonable for the size of the problem and likely benefits? 1 = Yes, 0.5 = Possibly, 0 = No	Does the supporting strategy does the compliance contribute to continued target flooding? Possibly, 0 = No, - = does not specifically	The anticipated time frame for implementation. H:(1) 1-2yrs, M:(.5)3-4 yrs, L:(0)4+ yrs; weighted (x2)	Total*	Priority*
1. Continue to enhance community preparedness programs.	1	0.5	1	1	0.5	0.5	0.5	5.5	Medium
2. Provide “welcome kits” to new home owners for properties within the flood plain, or with a significant risk of flooding.	1	0.5	0.5	0.5	1	0.5	0.5	5	Medium
3. Upgrade emergency notification system to incorporate cell phone numbers into the database.	1	1	1	1	1	-	1	7	High
4. Explore the use of social media networks to disseminate emergency notifications and severe weather warnings.	1	1	0.5	0	1	-	0	3.5	Low
5. Develop a prerecorded flood alert message for the emergency notification system to be activated prior to flood events.	0	1	1	1	1	0	1	6	High
6. Develop a strategy to provide more information online	1	1	1	1	1	-	1	7	High
7. Work with telecommunications entities to promote a modern telecommunications network.	1	0.5	1	0	0.5	-	0.5	4	Medium
8. Encourage the study of alternative systems for delivering reliable power to residents.	1	0.5	0.5	0	0	-	0	2	Low

Objective 2. *Improve the Town of Wilton’s ability to prepare for and respond to natural disasters and severe weather events.*

Supporting Recommendation									Priority*
1. Continue to hold regular meetings with town departments that may need to respond to natural disasters, focused on sharing information, coordination and to develop protocols.	1	1	1	1	1	-	1	7	High
2. Continue to work with DEMHS to enhance Training and exercises on disaster responses and education on Property damage assessment forms.	0.5	0.5	0.5	1	0.5	-	0.5	4	Medium
3. Develop a secure website to be used to share data and information with emergency management and the EOC during a natural disaster.	1	0.5	0.5	0.5	0.5	-	0.5	4	Medium
4. Implement a town-wide GIS.	1	1	1	1	0.5	-	1	6.5	High
5. Identify ways to improve the use of GIS for use in identifying areas and facilities vulnerable to disasters and for use to enhance emergency management.	1	1	1	1	1	-	1	7	High

6.	Inventory and update conditions of town owned significant culverts and bridges, and consider repairs or replacement as necessary or as funding becomes available.	1	0.5	0.5	1	0	0	0	3	Low
7.	Continue to work with CT DOT and DEP to maintain flow of streams through expansive wetlands.	1	0.5	1	0	0.5	-	0	3	Low
8.	Continue to provide capital budget funds for drainage projects and investigation of drainage problems.	1	1	1	1	0.5	-	1	6.5	High
9.	Continue to work to implement recommendations from the current storm water management plan.	1	0.5	1	1	0.5	0.5	0.5	5.5	Medium
10.	Enhance storm drain maintenance activities:									
	• Maintain records for storm drain maintenance.	1	1	1	1	1	-	1	7	High
	• Continue to work to increase frequency of storm drain clean out.		0.5	1		0.5		0.5	5	Medium
	• Continue to identify and eliminate cross connections between storm and sanitary sewer systems.		0.5	1		0		0	3.5	Low
	• Develop a plan for dealing with back-ups and failures.		0.5	0.5		0.5		0	3.5	Low
11.	Continue to assess the ecological and health implications of winter road salting and investigate alternatives.	0	0.5	0.5	0	0.5	-	0	1.5	Low
12.	Ensure that Fire Station 2 continues to serve western Wilton.	1	1	1	1	0.5	-	1	6.5	High
13.	Analyze options for meeting expansion needs of Fire Station 2 on-site, on other sites, or by sharing services with neighboring communities.	1	1	1	1	0.5	-	1	6.5	High
14.	Continue to require the provision of fire water cisterns when development cannot be served by public water.	1	0.5	1	1	0.5	-	0.5	5	Medium
15.	Procure equipment to sustain critical facilities in the event of a disaster and to enhance EOC capabilities as needs are identified.	1	0.5	1	1	0	-	0	3.5	Low
16.	Continue to monitor the condition of Merwin Meadows dam, if necessary consider options for dam removal identified in the engineering study.	0	1	1	0.5	0	-	0	2.5	Low
17.	Encourage evaluation of dams under the purview of the DEP.	0	1	1	0	0	-	0	2	Low
18.	Work with Norwalk's First Taxing district to improve communications and coordinate the release of water from the Browns Reservoir.	0	0.5	1	1	1	0.5	1	6	High
19.	Assess vulnerability of critical facilities to earthquakes, hurricanes, tornadoes.	1	1	1	0.5	0.5	-	0.5	5	Medium
20.	Evaluate municipalities sheltering and evacuation needs for a variety of storm scenarios.	1	1	1	1	0	-	0.5	5	Medium
21.	Train additional volunteer personell in shelter management and emergency supply distribution.	1	1	1	1	1	-	1	7	High
22.	Establish a database on well water by using information submitted to the local health department for each new well and complaints received.	0	0.5	1	0.5	0.5	-	0	2.5	Low
23.	Monitor well water quantity issues by reviewing data annually.	0	0.5	0.5	0.5	0.5	-	0	2	Low
24.	Explore the need for a drought ordinance.	0	1	0.5	1	0.5	-	0.5	4	Medium
25.	Begin to investigate potential impacts resulting from sea level rise, with special attention paid to waste waters systems.	0	0.5	0.5	0	0	-	0	1	Low

Objective 3. ◇ *Reduce the amount of debris from severe storms through preventive tree maintenance.*

Supporting Recommendation									Priority*
1. Work with DEMHS to complete and enhance the state and regional debris management plan and to address local needs.	1	0.5	1	1	1	-	1	6.5	High
2. Designate pre-planned locations for debris storage and management.	1	0.5	1	0.5	1	-	1	6	High
3. Conduct a Town-wide inventory and assessment of street trees, consider conducting the inventory in conjunction with other municipalities in the region.	1	0.5	0.5	0.5	0	-	0	2.5	Low
4. Continue to commit capital funding annually for public tree maintenance and plantings.	1	0.5	0.5	1	0	-	0	3	Low

Objective 4. ◇ *Reduce the Town of Wilton's Vulnerability to Flooding.*

Supporting Recommendation									Priority*
1. Assure strict adherence to current flood plain regulations.	0	1	1	1	1	1	1	7	High
2. Consider conducting drainage and watershed evaluations for all problematic waterbodies in the town.	0	0.5	0.5	0.5	0.5	1	0	3	Low
3. Maintain the Federal Flood Insurance Program which provides insurance for property owners in flood hazard areas, and encourage development to be located outside flood-prone areas wherever possible, including increased setbacks to account for sea level rise.	0	1	1	1	1	1	1	7	High
4. Encourage acquisition of wetlands beneficial to the Town.	0	0.5	1	1	0	1	0	3.5	Low
5. Continue to encourage the preservation of undeveloped lands within the 100-year flood zone with the use of Open Space purchase, donation or conservation easement.	0	0.5	1	1	0	1	0.5	4.5	Medium
6. Revise subdivision regulations to require open space set asides to reflect upland to wetland ratio of parcel.	0	0.5	1	1	1	0.5	0.5	5	Medium
7. Ensure that the Town is up-to-date in its storm water management planning (NPDES) requirements.	0	1	1	1	1	0	1	6	High
8. Ensure expert engineering review of projects with potential storm water impacts.	0	1	1	1	0.5	0	0.5	4.5	Medium
9. Require drainage review for all projects that exceed a certain threshold of land clearing or a certain percentage of impervious surface.	0	0.5	0.5	1	1	0.5	0.5	4.5	Medium
10. Consider requiring a drainage review when a certain amount of land is cleared of vegetation.	0	0.5	0.5	0.5	1	0.5	0.5	4	Medium
11. Reduce impervious surfaces by adopting impervious coverage allowances for all zoning districts or amending regulations to decrease need for impervious surfaces.	0	0.5	0.5	1	1	0.5	0	3.5	Low
12. Ensure that redevelopment reduces runoff from current conditions.	0	0.5	1	1	1	0.5	1	6	High
13. Consider requiring Low Impact Development (LID) techniques for all new development, including Town projects and road projects.	0	0.5	0.5	1	0.5	0.5	0.5	4	Medium
14. Assist property owners along the Norwalk River with retrofitting properties using LID principles.	0	0.5	0.5	1	0.5	0.5	0.5	4	Medium

15.	Ensure that redevelopment incorporates measures to improve storm water quality and quantity.	0	0.5	1	1	0.5	0.5	0.5	4.5	Medium
16.	Promote infiltration rather than diverting runoff into the Town's drainage system.	0	0.5	1	1	0.5	0.5	0.5	4.5	Medium
17.	Encourage landowners to retain storm water, such as by using rain barrels or planting rain gardens.	0	0.5	1	1	0.5	0.5	0.5	4.5	High
18.	Educate on the benefits of riparian and wetlands protection.	0	1	1	1	1	0	0	4	Low

Appendix D

Planning Process Supporting Documentation

Overview of the Planning Process

The following table identifies how each municipality participated in the planning process. Due to the expedited timeframe to update the plan electronic communication and circulation of materials to the advisory committee was heavily relied upon. The advisory committee was responsible for circulating materials within their respective municipality, and compiling and relaying all comments to SWRPA. The Chief Elected Officials from each municipality was contacted in January of 2010 and asked to appoint. The first Advisory Committee meeting and plan kickoff meeting were held April 12. Agendas and meeting summaries of all public meetings are available as a companion document, *2011 Update Meeting Summaries*, posted on the project website <http://www.swrpa.org/Default.aspx?Regional=268>.

Municipality	Advisory committee member(s) appointed by CEO	Advisory Committee & Kick Off meeting 4/12/2010*	Response to municipal questionnaire	MPO Meeting 5/27/2010*	Summary of implemented activities from 2005 PDM	Review & Comment Hazard Evaluation and Risk Assessment Objectives	MPO Meeting 6/23/2010*	Municipal meeting*	Review & Comment draft Mitigation strategies and municipal write up	Preliminary draft 2010 PDM review/Comments	Advisory committee meeting 9/28/2010*	MPO Meeting* 10/28	Advisory Committee meeting 10/13/2010*	Review of Draft Plan for Public Review*	Draft plan available on town website	Presentation to town board*	Review and comment on final plan for submittal 11/18/2010	Revisions Teleconference 5/18/2011	MPO Meeting, Request for Approval 5/26/2011	Plan Adopted (Following FEMA Approval Pending Adoption)**	Other
Darien	x		x		x	x	x	7/27/2010	x	x				x	x	12/13/2010	x			x	
Greenwich	x	x	x	x	x	x	x	10/4/2010	x	x				x	x	11/4/2010	x		x^	x	^5/18/2011 Teleconference coordinated with Stamford
New Canaan	x			x	x	x	x	Conducted internally^	x	x	x	x	x	x	x	11/17/2010	x	x	x	x	^Coordinated by 1st Selectman and Advisory Committee
Norwalk	x		x		x	x	x	7/7/2010 & 8/11/2010	x	x		x		x	x	11/18/2010	x		x	x	Presentation Norwalk Public Safety Commission Meeting 5/12/2010
Stamford	x	x	x		x	x	x	7/27/2010	x	x	x		x	x	x	12/2/2010	x	x		x	
Weston	x		x	x	x	x	x	7/1/2010	x	x		x		x	x	11/18/2010	x	x	x	x	
Westport	x	x	x	x	x	x	x	7/7/2010	x	x	x	x	x	x	x	11/17/2010	x	x	x	x	
Wilton	x	x	x	x	x	x	x	8/3/2010	x	x	x	x	x	x	x	11/15/2010	x	x	x	x	

*Media release and open to the public

** FEMA Approval Pending Adoption Received 5/24/2011

Appendix E

Planning Resources

Planning Resources

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Appendix F

Flood Insurance Rate Map Panels

